FINAL
ENVIRONMENTAL BASELINE SURVEY

OVER-THE-HORIZON BACKSCATTER EAST (OTHB-E), MOSCOW, MAINE, EAST COAST SITE

February, 2007

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EXECUTIVE SUMMARY

The purpose of this Environmental Baseline Survey (EBS) is to assess the environmental conditions at the Over the Horizon Backscatter – East (OTHB-E) Transmitter Site located in Moscow, Maine. It documents whether there is any evidence to suggest possible contamination at this Site, either in the soil or groundwater, resulting from the past or current use or storage of hazardous material or storage of hazardous waste. This EBS is intended to support the proposed disposal efforts through the transfer of the property to the General Services Administration (GSA) for selling.

An EBS collects all available information into a single document for use by the Air Force in making decisions concerning real property transactions. Although primarily a management tool, an EBS also assists the Air Force in meeting its obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Community Environmental Response Facilitation Act. An EBS is required by Department of Defense (DoD) policy before any property can be sold, leased, transferred, or acquired.

Environmental documents, land-use maps, and aerial photographs were reviewed to identify current and historical land uses and potential sources of contamination. Available state and federal environmental records were reviewed to identify potential areas of concern. A physical inspection of the property was conducted to identify any evidence of staining, distressed vegetation, or other indications of contamination, and personnel with knowledge of the history and current use of the properties were interviewed. The result of the data-gathering process was a collection of component information that, when assembled, provided a picture of the existing condition. This enabled the researchers to sort the properties into defined environmental resource categories and identify data gaps. Every reasonable effort was made to collect and review all available data.

The records search, personnel interviews, and site investigation did not identify any significant storage of hazardous materials except for small quantities of paint and cleaning materials. All Underground Storage Tanks have been removed in the past few years. No evidence was found of contamination or spills associated with these areas. Furthermore, no evidence was found that hazardous substances or petroleum products or their derivatives were disposed of on the properties or that such substances had migrated from adjacent areas.

In accordance with Air Force Instruction (AFI) 32-7066, properties involved in transfer of ownership should be classified into one of seven categories based on the presence of hazardous substances or petroleum products or their derivatives. Any property classified as Category 1 through 4 may undergo transfer of ownership without reservation, based on the property's environmental condition. The assessment indicates no evidence of contamination at the subject properties associated with their past or present use. All areas associated with the subject properties are classified as Category 2 and may undergo transfer of ownership under AFI 32-7066 to the GSA in order to be sold.

The Maine Department of Environmental Protection (MEDEP) reviewed the EBS and "considers the EBS for Transfer of the Moscow, ME Transmitter Site to the General Services Administration to be finalized".

1.0 INTRODUCTION

The OTHB Radar Systems were developed in the early 1970s to provide all-altitude, long-range surveillance of aerial approaches to the United States (US). Three OTHB radar systems were planned in the US, one each on the west and east coasts, and a third in Alaska. Each system was to include transmitter, receiver, and operations sites. OTHB radar systems use the ionosphere to refract outgoing radar waves and return signals, enabling the system to detect and track targets that would otherwise be hidden by the curvature of the earth, at ranges of up to 1,800 nautical miles. Processed data were communicated from the receiver location to the operations site for correlation with known aircraft positions.

The OTHB-E Radar System was built by General Electric (GE) beginning in 1982. The Air Force accepted control of the system in April of 1990. In 1991 with the end of the Cold War, plans to construct the Alaska system were cancelled. In 1991 the National Oceanic and Atmospheric Association (NOAA) began to use the OTHB-E for environmental monitoring and their usage ended in August of 1997. They used existing contractors that were already on-site and never operated the OTHB Radar System themselves. Later, the Air Force was directed by Congress to refocus operations at the OTHB-E Radar System to counter-narcotics surveillance which ended in 1995-1996. Currently, no radar activity is taking place.

1.1 Purpose of the Document

This document has been prepared to report the findings of the EBS, which was conducted to evaluate the land and area of the OTHB-E Transmitter Site. The site is located outside of Moscow, Maine, as shown in Figure 1.1-1. This site is owned and operated by the Air Force, Air Combat Command (ACC).

This document was prepared in accordance with Air Force Instruction (AFI) 32-7066, "Environmental Baseline Surveys in Real Estate Transactions" (25 April 1994), which provides guidance on the implementation of the CERCLA in real property transactions. AFI 32-9004, "Disposal of Real Property" (21 July 1994) requires that the Air Force dispose of all property which is no longer needed to support the Air Force mission. In accordance with this instruction, it has been determined that disposal of the OTHB-E Moscow, Maine, site is in the best interest of the government. The purpose of the action is to terminate Air Force real estate interests in the OTHB-E Radar site in Moscow, Maine, and to transfer control to the GSA for public sale.

1.2 Purpose and Need for the Environmental Baseline Survey

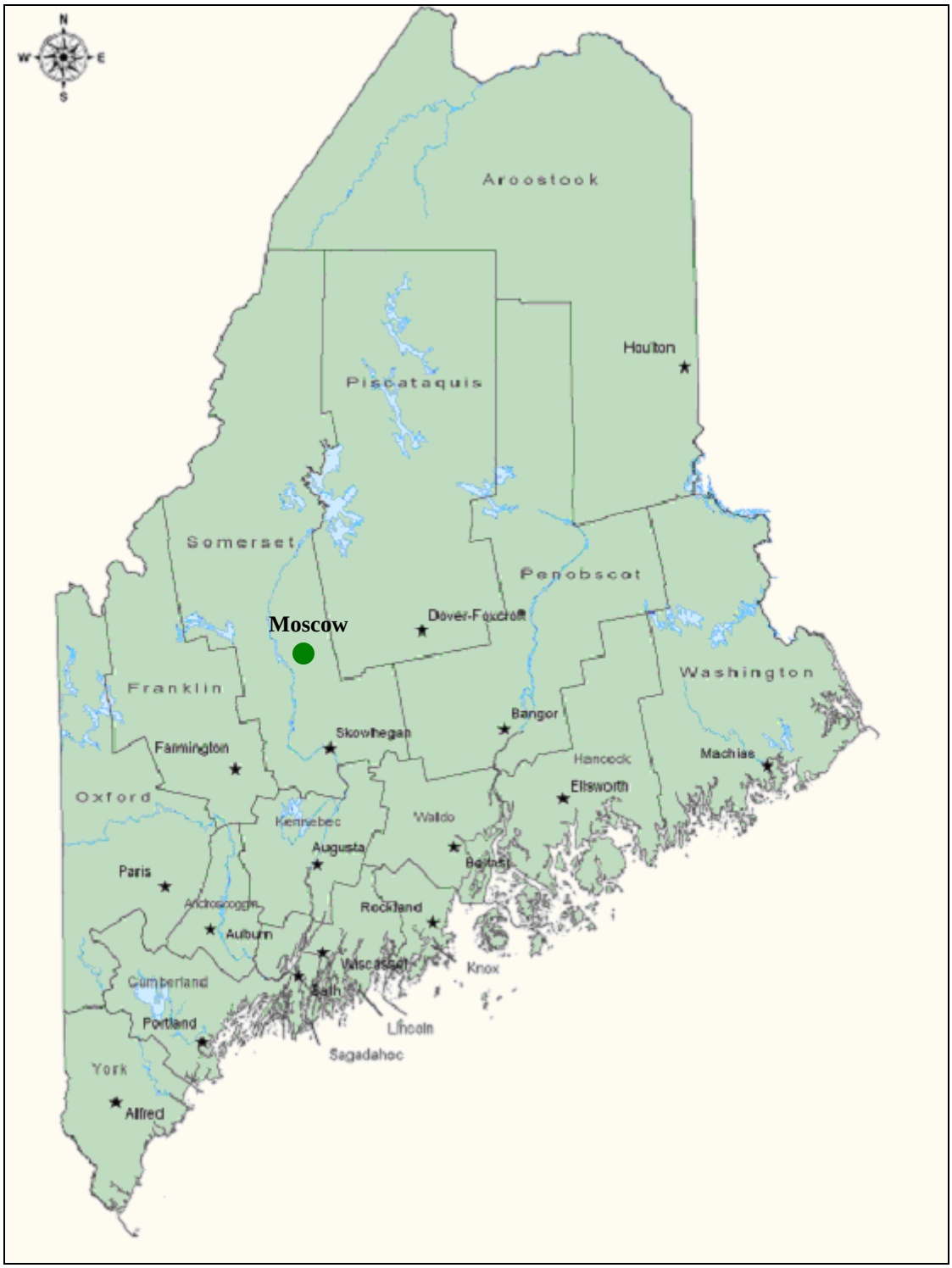
The purpose and need for this EBS is to assess the environmental conditions at OTHB-E Transmitter Site. It documents whether there is any evidence to suggest possible contamination at this Site, either in the soil or groundwater, resulting from the past or current use or storage of hazardous material or storage of hazardous waste. This EBS is intended to support the proposed transfer of the property to the GSA.

An EBS collects all available information into a single document for use by the Air Force in making decisions concerning real property transactions. Although primarily a management tool,

an EBS also assists the Air Force in meeting its obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Community Environmental Response Facilitation Act. An EBS is required by Department of Defense (DoD) policy before any property can be sold, leased, transferred, or acquired. An EBS identifies recognized environmental conditions, defined as the presence or likely presence of any hazardous substances or petroleum products under conditions that indicate an existing release, a past release, or the material threat of a release into structures on the property or into the ground, groundwater, or surface water of the property. The term does not include *de minimis* conditions that generally do not represent a material risk of harm to public health or the environment and that generally would not be the subject of a regulatory enforcement action. Appendix H contains certifications that attest to the environmental conditions at the Moscow transmitter site.

A previous EBS, combined with an Environmental Assessment (EA) was prepared for the OTHB-E Moscow Radar System site in October 2003, which included the OTHB-E Radar System site in Columbia Falls and a portion of the Bangor Air National Guard Base (ANGB) in Maine, which acted as the operations center for the radar system.

The previously mentioned EA was prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality Regulations, and 32 CFR 989, *The Environmental Impact Analysis Process* (EIAP) formerly known as AFI 32-7061. A Finding of No Significant Impact (FONSI) was signed on 27 October 2003 which allowed the Air Force to dispose of the property under NEPA. Concurrently an EBS was written in 2003 in accordance with AFI 32-7066 (*Environmental Baseline Surveys in Real Estate Transactions*). The 2003 EA/EBS was distributed to federal, state, and local agencies for review and received many review comments, including agency input on threatened and endangered species, historic preservation concerns, and other related information. In addition, it received a number of comments from the Maine Department of Environmental Protection (MEDEP). There are several letters from MEDEP that identify concerns. These letters are included in Appendix G-1. Appendix J includes a matrix of the state of Maine's concerns and provides information on how and where these concerns were addressed in the EBS. Because of the concerns from MEDEP and the amount of time elapsed from the original EBS, the Air Force decided to update the previously completed EBS with current information for a more realistic environmental baseline of the conditions present at the OTHB-E site. Information from the 2003 EBS was used to the extent possible, and the information updated to address additional comments received.



Source: Maine Office of GIS

Figure 1.1-1 State of Maine, Moscow Location

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1.2.1 Boundaries of the Property/Survey Area

The transmitter site is composed of 1,274 acres and has an approximate perimeter of 12.5 miles. It is located roughly eight (8) miles northeast of the cities of Moscow, and Bingham, Maine. The site is made up of three (3) sectors, each of which has a building on it. A garage is also located in Sector 1. The entire transmitter site has between seven (7) and eight (8) miles of fencing. Roads were specifically built to connect these sectors together. Figure 1.2-1 shows the OTHB-E transmitter site located near Bingham, Maine.

The antennae are between 35 and 135 feet high. Behind the antennae is a back screen that ranges in height between 45 to 100 feet and is approximately 3,630 feet long. There is also a ground screen that extends 750 feet in front of the antennae. The three sectors are all the same. The buildings in each sector measure 242 feet long, 60 feet wide and 19 feet high.

1.2.2 Legal Description of Property to be Transferred

The State of Maine is composed of organized townships and unorganized townships. The Transmitter Site sits in two organized townships, which are Moscow and Caratunk. The difference between the two types of townships is that organized townships pay taxes to the city or town they are in and unorganized townships pay taxes directly to the state of Maine.

The legal description of the property is described below:

Moscow Radar Transmitter Site; Moscow, Maine
County: Somerset County
Latitude/Longitude of the Transmitter Site; Based on state of Maine coordinate system
45.160800 - 45º 9’ 38.9” Latitude (North)
69.859100 - 69º 51’ 32.8” Longitude (West)
Sector 1 TX, E149, 000; N491, 000
Sector 2 TX, E151, 000; N487, 000
Sector 3 TX, E155, 000; N479, 000
Total of four buildings

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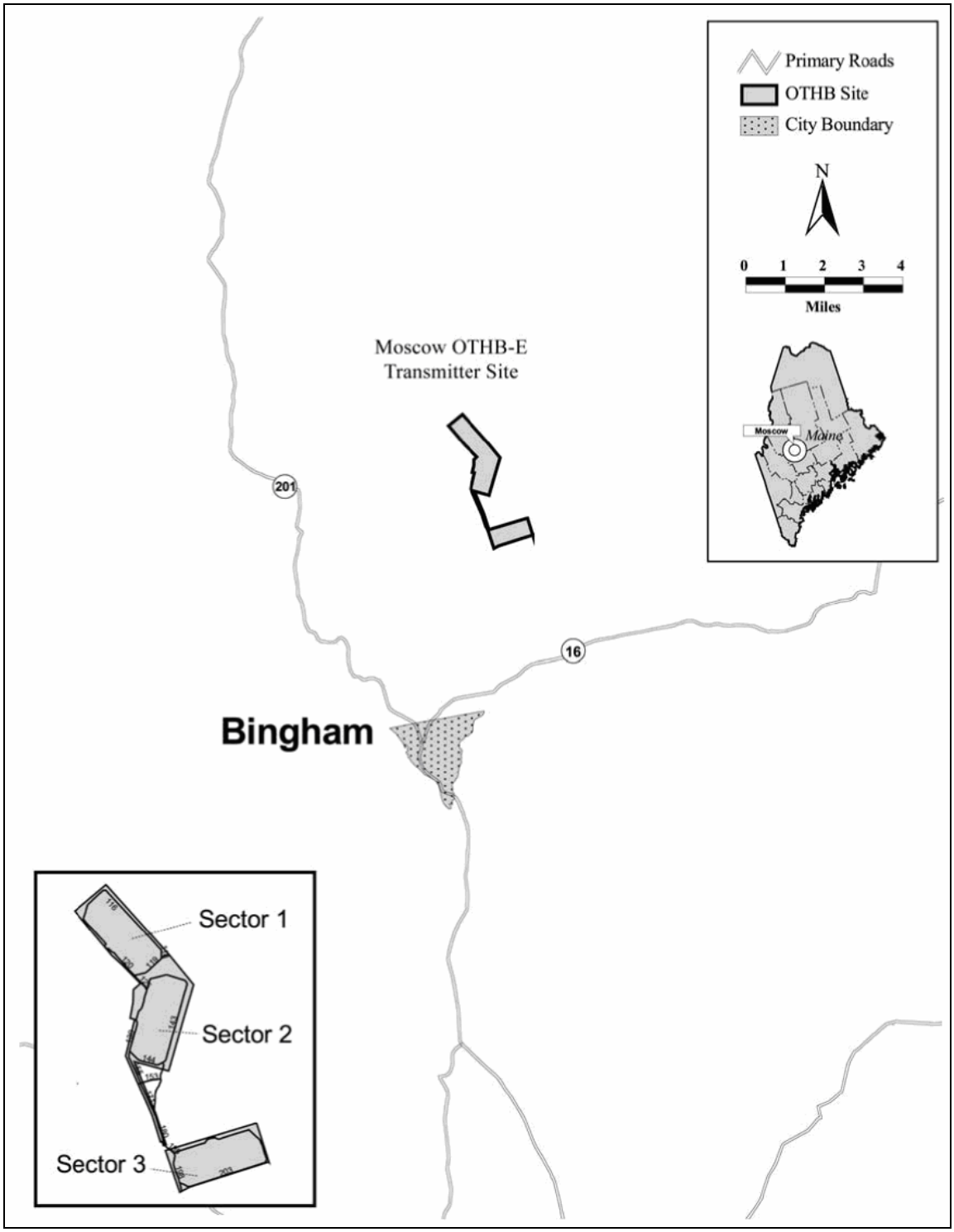

Source: USAF 2003 Final EBS for Proposed Land Disposal: OTHB-E

Figure 1.2-1 OTHB-E Transmitter Site, Near Bingham, Maine

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1.3 Survey Methodology

Logical interactions taken included following the standard Survey Methodology in preparing an EBS. The EBS accomplished the following:

- Determined the condition of real property to be disposed under the provisions of Air Force real estate instructions;
- Documented the nature, magnitude, and extent of any environmental contamination of the property considered for disposal by developing sufficient information to assess health and safety risks to ensure adequate protection of human health and environment, as well as possible effects on property value from contamination discovered on site;
- Defined potential environmental contamination liabilities associated with the subject property and established environmental due diligence under the Innocent Land Owners Defense clause of the CERCLA; and
- Provided a basis for a notice of the type, quantity, and time frame of any storage, release, or disposal of a hazardous substance on the property as required under Section 120(h)(1) of CERCLA.

1.3.1 Approach and Rationale

This EBS documents whether there is any evidence to suggest possible contamination at the subject property, either in the soil or in groundwater, resulting from the past or current usage or storage of hazardous material or storage of hazardous waste. This EBS followed a methodical process in which available information was analyzed and conclusions were drawn about the condition of the properties. The findings presented in this EBS were developed based on:

- A review of previously developed data for the subject properties;
- Interviews with personnel with knowledge of the history and current use of the property; and
- A physical reconnaissance of the subject property.

This EBS was prepared in accordance with the provisions of AFI 32-9004, "Disposal of Real Property," (Air Force, 1994), AFI 32-7066, "Environmental Baseline Surveys in Real Estate Transactions" (Air Force, 1994a), and the American Society for Testing and Materials (ASTM) Standard E-1527, "Environmental Site Assessment for Commercial Real Estate" (ASTM, 2000).

1.3.2 Documents Reviewed

Environmental documents, land-use maps, and aerial photographs were reviewed to identify current and historical land uses and potential sources of contamination. Available state and federal environmental records were reviewed to identify potential areas of concern. A physical inspection of the properties was conducted to identify any evidence of staining, distressed vegetation, or other indications of contamination, and personnel with knowledge of the history and current use of the properties were interviewed. The result of the data-gathering process was a collection of component information that, when assembled, provides a picture of the existing

condition. This enables the researchers to sort the properties into defined environmental resource categories and identify data gaps.

The EBS Team coordinated with federal, state, and local agencies to gather up-to-date information on the Moscow Radar Site. In addition, Environmental Data Resources, Inc. (EDR) prepared an up-to-date EDR Radius Map with GeoCheck® Report, which is included in Appendix G-1. The following is a list of databases searched for the report.

- National Priority List (NPL)
- Proposed NPL
- Delisted NPL
- Comprehensive Environmental Response, Compensation And Liability Information System (CERCLIS)
- CERCLIS – No Further Remedial Action Planned (NFRAP)
- Corrective Action Report (CORRACTS)
- Resource Conservation and Recovery Information System (RCRA) Large and Small Quantity Generator (RCRA GEN)
- Emergency Response Notification System (ERNS)
- Biennial Reporting System (BRS)
- Superfund (CERCLA) Consent Decrees (CONSENT)
- Records of Decision (ROD)
- Facility Index System/Facility Identification Initiative Program Summary Report (FINDS)
- Hazardous Materials Information Reporting System (HMIRS)
- Material Licensing Tracking System (MLTS)
- Mines Master Index File (MINES)
- Federal Superfund Liens (NPL LIENS)
- PCB Activity Database (PADS)
- RCRA Administrative Action Tracking System (RAATS)
- Toxic Chemical Release Inventory System (TRIS)
- Toxic Substances Control Act (TSCA)
- Federal Insecticide, Fungicide and Rodenticide Act/Toxic Substances Control Act Tracking System (FTTS INSP)
- Section 7 Tracking System (SSTS)
- Maine Uncontrolled Hazardous Substance Sites Program List of Investigations (SHWS)
- Maine Solid Waste Facility List (SQF/LF)
- Maine Hazardous Material and Oil Spill System Database (HOSS)
- Maine Underground Storage Tanks (UST) Database
- Maine Aboveground Storage Tanks (AST)
- RCRA Treatment, Storage, and Disposal Facilities (RCRA TSD)
- RCRA Corrective Action/Violation Sites (RCRA COR)
  Database of Active Solid Waste Landfill (SWL) Facilities
- Leaking UST Database
- Soils (USGS/NRCS)

Other documents, currently located in the headquarters planning office, ACC/A7ZP, Langley AFB, Virginia, that were reviewed for the preparation of this report include:

- Final Environmental Impact Statement for proposed design and construction of OTHB radar system in the United States, 1975, prepared by the Air Force.
- Environmental Assessment (1991). Air Force Tactical Air Command Over-The-Horizon-Backscatter Radar System Bangor Air National Guard Station, Bangor, Maine: Reduction in Operating Status, prepared by the Air Force.
- Draft Supplement to 1975 OTHB Environmental Impact Statement, prepared by the Air Force.
- Part IIA and IIB of Final Environmental Impact Statement for Proposed Central Radar Program, May 1987, prepared by the Air Force.
- Categorical Exclusion: Proposal to put OTHB radar system into warm storage status, prepared by the Air Force, 1993.
- Maine Department of Natural Resources, UST Records
- OTHB-E Plans/Procedures Manual, 14 December 2001.
- EBS/EA for OTHB-E Moscow, Maine, East Coast Site, prepared in 2003 by the Air Force. The Air Combat Command, 2003 and correspondence with MEDEP related to this document.

Topographic Maps and Aerial Photographs:

- United States Geological Survey (USGS) Aerial Photographs – Aerial photograph from 1956 before Transmitter Site was Built and Aerial Photograph of Transmitter Site with Construction TX 1 Staging Areas Marked. Copies of these photographs are included in Appendix E and Figures 2.2-1 and 2.9-1 respectively.
- Topographical Map, USGS Dimmick Mountain (ME) Topo Map Quad - OTHB-E Transmitter Site Topography Map. Copies of this map are included in Appendix E and Figure 2.1.1-1.
- Topographic Maps from EDR Historical Topographic Maps Report - Topographic Map with Water Resources and Contour Lines, and Map Showing Water Resources in Area. Copies of these maps can be found in Appendix E and Figures 2.10-1 and 2.10-2 respectively.
- Wetlands map - Wetlands at OTHB-E Transmitter Site near Bingham, Maine. Copies of this map are included in Appendix E and Figure 2.16-1
- Wetlands Map for Somerset County from Maine GIS – Wetland Characterization, Somerset County. A copy of this map can be found in Appendix E.
- Essential Wildlife Habitats from Maine Department of Inland Fisheries and Wildlife - Wildlife Observations near Transmitter Site. Copies of this map are included in Appendix E and Figure 2.16-2.
- Bald Eagle Nesting Sites from Maine GIS – Bald Eagle Nesting Sites in Area of Transmitter Site. A copy of this map can be found in Appendix E.
- Land Use Maps from Maine GIS – Land Cover and Wetlands of Gulf Maine. A copy of this map can be found in Appendix E.

- General Area Maps from Maine GIS and 2003 EBS – State of Maine with Moscow Location and OTHB-E Transmitter Site, Near Bingham, Maine. Copies of these maps can be found in Appendix E and Figures 1.1-1 and 1.2-1 respectively.

1.3.3 Property Inspections

The subject property was visually inspected on 6 June 2006. The survey involved obtaining access through ACC/PMS. An Air Force employee accompanied EBS survey personnel during the building and grounds inspections. Photographs were also taken and can be found in Appendix F. Adjacent properties are discussed in Section 3.0, Findings for Adjacent Properties.

1.3.4 Personnel Interviews

Personnel were interviewed during the on-site inspections and a comprehensive six-page EBS Questionnaire was used to interview Mr. Deane Smith. A copy of this EBS questionnaire can be found in Appendix G-2. Another individual at the Moscow site that was interviewed and provided significant information about the facility was Mr. Alan C. Hensley, General Maintenance Worker employed with Native-Energy & Technology, Inc. He is also involved in the dismantling of equipment at the Site.

Follow-up communications with Mr. Deane Smith were conducted regarding various issues related to the subject Transmitter Site, including past and current uses of the property and surrounding properties and hazardous materials or pesticide use/storage. Mr. Smith also provided drawings and information on the removal of the USTs.

Prior to the site inspection on June 6, 2006, an initial site reconnaissance was performed November 12 – 15, 2003, for the preparation of the 2003 EA/EBS during which the following on-site personnel were interviewed:

- Mr. Deane Smith, HQ ACC PMS/OLI
- Mr. Randy McCandless, OTHB-E Transmitter Site
- Mr. Mike Lawyerson, OTHB-E Transmitter Site.

1.3.5 Sampling

No sampling was conducted on this project site because there have been no spills and drinking water is brought into the facilities. The well water is used only for nondrinking purposes.

Based on the records search, personnel interviews, and both of the site inspections (2003 and 2006), there is no evidence that follow-up environmental sampling at the subject property is needed.

2.0 AFFECTED ENVIRONMENT

2.1 Environmental Setting

The average summer temperature in the region ranges from 50 degrees Fahrenheit (ºF) to 80ºF. In the winter and fall months, the average temperature ranges from 10ºF up to about 40ºF. The daily low temperature in the winter can get as low as 2ºF. Roughly 40 percent of the time there is precipitation in Moscow, Maine. The amount of snowfall in the winter can reach up to 20 inches. There are about six months where snowfall is a regular occurrence.

The soil has a stratigraphic order of 113, (1 is youngest to 162 being the oldest). The rock description can be described as Devonian and Silurian eugeosynclinal, and has no metamorphosis. The soil has a water capacity of .15 inches (per inch) and has permeability of 1.81 inches per hour. The annual flood frequency is ranked as a four (4), which means there is no frequency. All of the soil information can be found in the EDR Radius Map Report found in Appendix G-1. Some trees that are present in the vicinity include white birch, red oak, maple, ash, spruce, fir, pine, and beech. Animals that are known to live in this region, but are not limited to, include moose, whitetail deer, bear, raccoon, and many types of birds. The property is mowed routinely and is well maintained.

2.1.1 Topographic Features

The location of the transmitter site is located at 45.160800/69.859100. The elevation is 1,398.6 feet above sea level as stated in the topographic map in Figure 2.1-1. There are rolling hills in the surrounding area, but the land where the transmitters are located is fairly flat.

2.1.2 Chain of Title for the Past 60 Years

A historical title search was conducted for the transmitter site for the previous 2003 EA/EBS. Records at the Somerset County Registries of Deeds in Skowhegan, Maine, were used to construct the historical chain of title report which includes lands acquired through purchase, condemnation, and easement. This document can be found in Appendix G-1.

2.1.3 Utilities Available to the Site

Phone and electricity service for the Moscow area is available commercially at the transmitter site. The electricity provider is Central Maine Power Company and they will be informed when transfer of the property has taken place. There are a total of nine (9) transformers; three are at the electrical substation located outside of Sector 1 and total 12,470 volts, and two transformers, one with 480 volts and the other with 208 volts, are at each of the three (3) sectors. At the substation in Sector 1 there are five (5) nitrogen cylinders, each 300 cubic feet, within the existing transformers. These nitrogen cylinders are located at the Sector 1 Substation only. They are exchanged when they need to be refilled; Maine Oxygen brings out the cylinders for the exchange. A smaller portable tank, which holds only 80 pounds, is filled by Mr. Deane Smith and is taken to the other sectors to maintain the transformers in those sectors. Once this is completed the portable tank is then returned to Sector 1 for storage with the other larger tanks.

Maine Oxygen has several offices, but the one in Waterville is used for the Moscow site. These nitrogen cylinders are not Air Force property; they are a leased good, property of Maine Oxygen. They must be maintained and refilled so that the transformers do not get ruined until the property is transferred to the new owners. To date, no leaks have occurred. There is one main power line which includes 115,000 transmission lines. It costs an average of $7,000 a month and uses a total of about 100 megawatts to keep the lines active. According to the caretaker of the Transmitter Site, Native Energy and Technology, Inc., all electrical equipment and systems, as well as spare parts, will remain on-site as instructed by the Air Force. The equipment will be transferred with the property to the GSA. Backup batteries are present and cleaned on a regular schedule. They will be properly disposed of according to state and federal regulations when the proposed transaction is complete. The drain in the room for the batteries flows into the septic tank for Sectors 2 and 3. The discharge point for Sector 1 flows into an underground drain. The phone carrier for the site is Verizon Communications. Water is provided by on-site wells and a septic system is used to dispose of sewage and wastewater. There is a leach field with holding tanks for each sector. All sectors have septic tanks, each holding 1,500 gallons. When the solids fill the septic tanks, they are pumped into the holding tanks for proper disposal at the nearest sewage disposal facility. The leach fields measure 100 feet by 100 feet. Pictures of these fields can be seen in Appendix F. There is no natural gas supplied to the transmitter site.

2.2 Land Use

2.2.1 Current Land Use

The OTHB-E Radar System transmitter site is located in a rural area. There are no occupied houses near the site though there are a number of seasonal hunting camps on the shores of Chase Pond approximately 1.5 miles southwest of the site. The surrounding land within 1½ miles is predominantly forested and is commercially timbered.

2.2.2 Historic Land Use

Before the transmitter was built the land was used for commercial timber production. An aerial photograph in Figure 2.2-1 is from 1956 and shows no structures existed on the site. The present day transmitter site is located inside the red square on the map, and the city of Bingham, Maine, is indicated with a red dot.

2.3 Hazardous Materials and Hazardous Waste

Hazardous materials are those substances defined by the CERCLA, as amended by the Superfund and Reauthorization Act, and the Toxic Substances Control Act. Hazardous wastes are defined by the Solid Waste Disposal Act (SWDA) as amended by the Resource Conservation and Recovery Act, which was further amended by the Hazardous and Solid Waste Amendments. In general, both hazardous materials and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or to the environment when released or otherwise improperly managed. Hazardous materials management at Air Force installations is established primarily by AFI 32-7086, Hazardous Materials Management. The AFI incorporates the requirements of all federal

Source: Topozone.com

USGS Dimmick Mountain (ME) Topo Map Quad
UTM 19 433068E 5000869N (WGS84/NAD83)
Elevation 1,398.6 ft / 426.3 m (USGS NED)

Figure 2.1-1 Topographic Map of Transmitter Site

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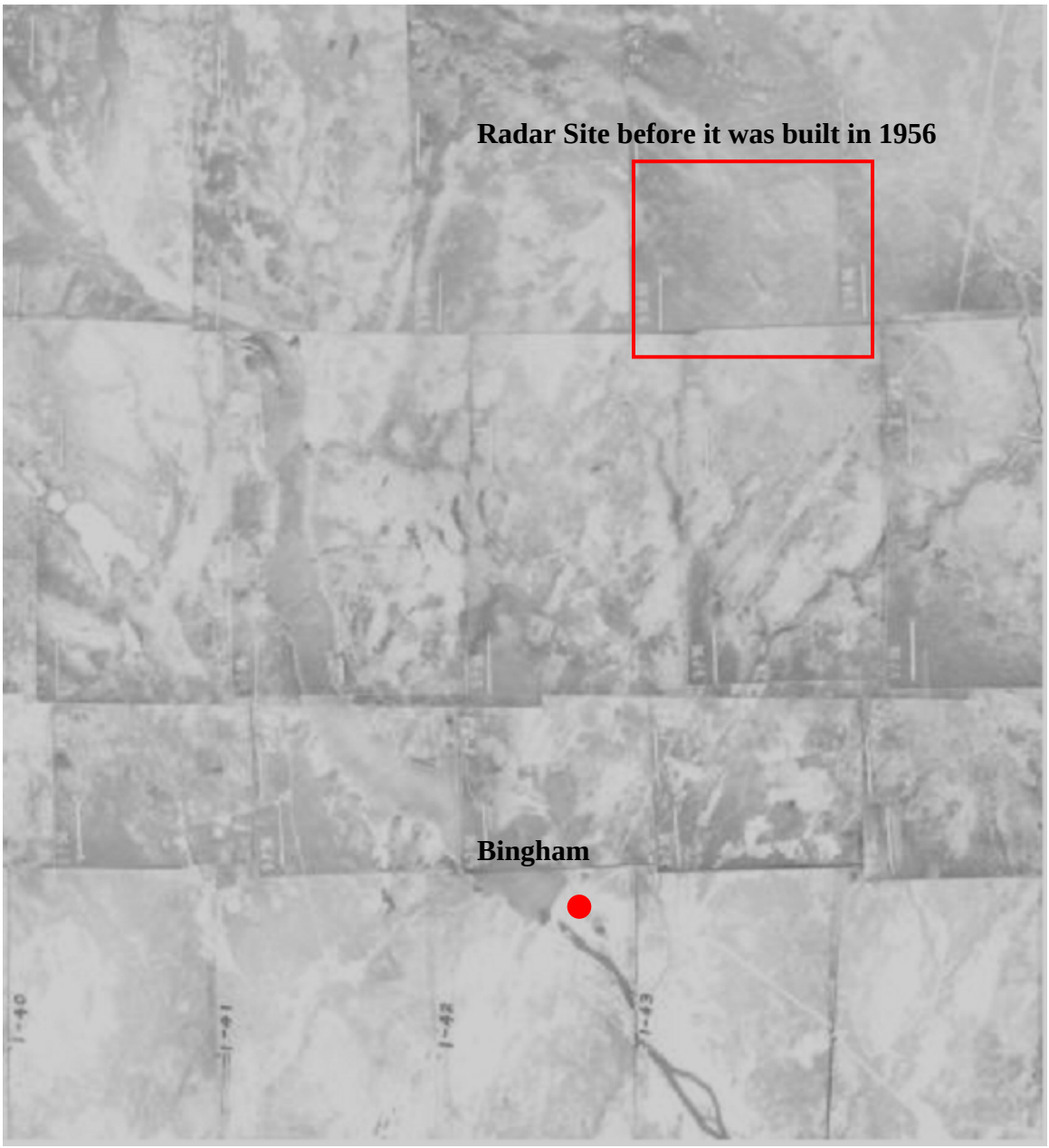

Source: USGS Aerial Maps from Earth Explorer

Figure 2.2-1 Aerial Photograph (1956) before Transmitter Site was built

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regulations, other AFIs, and Department of Defense (DoD) Directives, for the reduction of hazardous materials uses and purchases.

2.3.1 Results of Database Search

A search of federal and state environmental records was conducted for all lands within a two (2) mile radius of the center point of the transmitter site. Appendix G-1 contains a full report of these searches. Based on the Environmental Data Resources Inc. (EDR) Report (Appendix G-1), no Superfund sites were found in the area. EDR also conducted a search of properties within two (2) miles of the site. This report can also be found in Appendix G-1.

2.3.2 Hazardous Substances

According to Messrs. Randy McCandless and Mike Lawyerson, site maintenance workers, there are currently only facility maintenance materials stored on the sites. These include cleaners, painting supplies, and small amounts of motor oil and gasoline. Appendix G-6 includes a list of these substances and their locations on the sites. No available historic documentation suggests release or mishandling of these materials has ever occurred on the sites. Material Safety Data Sheets (MSDS) are kept for all of these substances at the transmitter site. Backup power supply is provided by batteries on all sectors of the transmitter site. The transmitter site is classified as a conditionally exempt small quantities generator of hazardous waste and is registered with the EPA accordingly due to this classification; however, the site has no EPA registration number. This classification indicates they do not produce more than 100 kilograms of hazardous waste per month, or 1 kilogram or less per month of acutely hazardous waste.

At the transmitter site, diesel fuel is stored in 75-gallon aboveground storage tanks (ASTs) in the generator rooms on each of the three sectors. Additionally, diesel fuel is stored in a 300-gallon AST in the garage on Sector 1.

As seen in the site photos in Appendix F, the garage on Sector 1 of the transmitter site contained hazardous waste accumulation areas. Only visual inspection of the site was performed, no sampling was conducted during the site inspection. When visually inspected, the unlabeled waste drums were empty, and no records exist of them ever being used to store hazardous materials.

2.3.2.1 Hazardous Material and Petroleum Products

The only hazardous products present on site are cleaning products, paint, and paint related products that are used to maintain the buildings and waste oil that is from the maintenance equipment and are not used above average household levels. Waste oil is discussed in the section below. There are also four (4) aboveground storage tanks (AST) which contain diesel. More details on these can be found in section 2.3.4.1.

Ethylene and propylene glycol were used to remove heat from deionized water. The deionized water was used to cool the transmitters, and was circulated to the heat rejecters outside to cool and then was sent back inside to repeat the process. This process was only needed when the transmitters were active. The ethylene and propylene glycol was pumped out of the heat

rejecters so that it could be used elsewhere and it was removed by a contractor hired by the Office of the Undersecretary of Defense-Intelligence (OUSD-I) when OUSD-I removed the transmitters and associated equipment from the site.

2.3.2.2 Hazardous and Petroleum Waste

A company out of Norwell, Massachusetts, Clean Harbors disposed of waste oil when the site was in operation; however, there is no longer a need for this service since the site was downgraded to caretaker status in October of 1997. Waste oil that is produced is recycled at a local recycler and is not stored on site.

During inspections of the transmitter no evidence of the improper use, storage, or disposal of hazardous material and petroleum products was observed. No sampling was conducted during the site inspection. The garage in Sector 1 has a stain on the floor and OTHB-E personnel report this is from a small spill of diesel fuel which was reportedly cleaned up using an absorbent material and disposed of in accordance with state and federal regulations. There is a stain in the building of Sector 3 but it is most likely not oil or any other hazardous substance, due to the fact the sealant on the concrete floors would not have adhered to oil products. The most probable cause of the stain, according to Mr. Deane Smith, is a burn that was the result of a worker welding.

2.3.3 Environmental Restoration Program (ERP)

Based on a review of available documents and interviews with on-site personnel there are no current or historic Environmental Restoration Program (ERP) sites on the properties.

2.3.4 Storage Tanks

There were once three (3) underground storage tanks (UST) on the transmitter site, one storage tank per sector; they were all removed in 1994. Table 2.3–1 provides information about the USTs, such as when the tanks were installed, what they held while in use, the material they were built with, and when they were removed. There are four (4) ASTs currently being used and one AST not being used.

2.3.4.1 Aboveground Storage Tanks

Four (4) ASTs are present on site, one AST per sector, which are 75 gallons each and are used to hold diesel. The fourth AST in the garage of Sector 1 is 300 gallons and also contains diesel fuel. These ASTs do not require permits due to their sizes (the state of Maine does not require a permit for those ASTs 75 gallons and under). Permits were not found for this site with the Fire Marshall's Office (Steve Dixon, Maine Fire Marshall's Office). Lastly, a 75,000 gallon water tank is located on site, but it is currently empty. A building specification for the large water tank can be found in Appendix G-4 under Building Specifications.

2.3.4.2 Underground Storage Tanks

Table 2.3-1 summarizes the history of underground storage tanks (UST) that were previously present at the transmitter site. There was a small incident that occurred with one of the USTs before they were removed. The frost broke the seal on one UST and water came into the tank, but no diesel leaked out. The soil was tested at all three sectors in 1994 and it was determined that no contamination occurred. The soil testing was completed by J.B. Plunkett Associates and is in the report with the UST removal information. Also, a certificate verifying the closure of the Sector 1 UST was obtained from Maine Department of Environmental Protection. Additional information about these USTs can be found in Appendix G-3.

Table 2.3-1 Underground Storage Tanks for Transmitter Site

Name	Sector 1 Transmitter Site	Sector 2 Transmitter Site	Sector 3 Transmitter Site
Tank ID	1	1	1
Tank Status	Removed	Removed	Removed
Date Installed	01-Jan-1985	01-Jan-1985	01-Jan-1985
Date Removed	11-Feb-1994	1-Nov-1994	31-Oct-1994
Product Stored	Diesel	Diesel	Diesel
Tank Capacity	3000 Gallons	3000 Gallons	3000 Gallons
Tank Material	Fiberglass - Reinforced Plastic - Petroleum Only	Fiberglass - Jacketed Tank - Double Walled	Fiberglass – Jacketed Tank – Double Walled
Pipe Material	Copper	Copper	Copper

2.3.4.3 Pipelines, Hydrant Fueling, and Transfer Systems

Based on inspection, review of available documents, and interviews with personnel, no pipelines, hydrant fueling, or transfer systems are present on site.

2.4 Oil/Water Separators

Based on inspection, review of available documents and interviews with personnel, two (2) oil/water separators are on-site. One oil/water separator is located in Sector 2 and the other is located in Sector 3. A drawing of the layout of the oil/water separators can be found in Appendix G-3. These drawings also show that the effluent drains into the septic system.

2.5 Pesticides, Herbicides, and Rodenticides

According to an inventory of hazardous materials provided by OTHB-E personnel, the rodenticide, d-Con is used and stored in buildings on each sector of the transmitter site. Mice can be a problem in the buildings, but simple snap traps are used to control them. In addition, GardenTech Sevin Lawn Insect Granules are also used.

No evidence was found that indicated the use of pesticides beyond minor "household" levels and no evidence was found to indicate pesticide contamination.

An herbicide was applied aerially, a form of Roundup®, which is sold as a glyphosate solution (with either isopropylamine or potassium salt) and must be diluted with water before application (http://www.monsanto.com/monsanto/content/products/productivity/roundup/glyphosate_human_risk_backgrounder.pdf). This was done in August 2002 for all three antenna fields to reduce the growth of small trees.

To the best of the caretaker's knowledge, the only chemicals used on the site on a regular basis have been dish detergents and Simple Green®, which was used to clean the floors (communication via email with Mr. Steven Treadwell, 18 September 2006).

2.6 Medical or Biohazardous Waste

Based on inspection, review of available documents and interviews with personnel, there is no evidence to suggest the historical or current presence of medical or biohazardous wastes.

2.7 Ordnance

Based on inspection, review of historical documents, and considering the mission of the OTHB-E Radar System sites, there is no evidence that there was current or historical use of ordnance at the transmitter site.

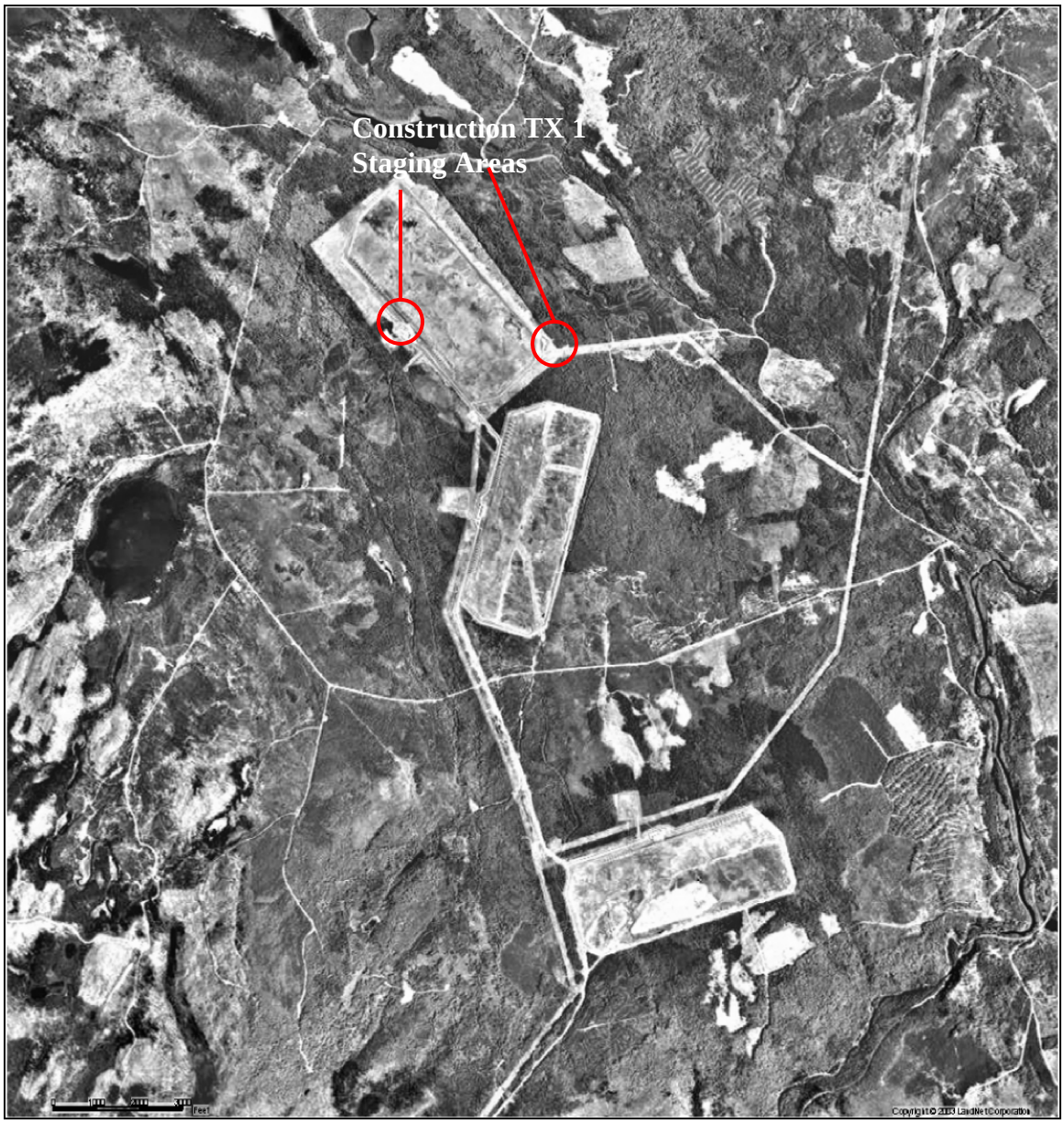
2.8 Radioactive Waste

Based on inspection, review of available documents, and interviews, there is no evidence of the use or storage of any radioactive materials or waste.

When the transmitters were in use there was a radio-frequency radiation hazard but this condition no longer exists since the transmitters are not active. Signs were posted to warn of this hazard when it was an issue.

2.9 Solid Waste

Historically and presently, solid waste is hauled off site for disposal. Waste is taken to Bingham by the site workers, and then taken to recycling centers and properly disposed of by the city. There are no active landfills on the sites. As indicated by the review of aerial photographs and the site walkover, two (2) small sites in Sector 1 were used during construction as TX 1 staging areas. One of these areas was by the helicopter pad in the southeast corner of Sector 1 and the other site was near the garage in the west side of the same sector. This can be seen in Figure 2.9-1, and the sites are marked with red circles. There were random materials such as bolts, lumber, and other building materials found, but the Air Force cleaned up this material. There were no hazardous materials found on these two sites.



Source: USGS Aerial Maps from Earth Explorer

Figure 2.9-1 Aerial Photograph of Transmitter Site with Construction TX 1 Staging Areas Marked

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2.10 Water Resources

2.10.1 Hydrogeologic Features

Heald Ponds is located just northwest of Sector 1. The ponds total about 30 acres and water is constantly being pumped away from the ground of the transmitter site and out onto adjacent properties. Chase Pond is located west of Sector 2 and Austin Stream runs almost parallel just south of Sector 3. Basset Brook runs along the west side of Sectors 2 and 3. Lastly, eight (8) miles west of the transmitter site is Kennebec Wyman Lake, which is the source of many of the surrounding streams and ponds. These and other water sources can be seen in Figure 2.10-1. Figure 2.10-2 shows the same water sources without contour lines or the outline of the transmitter site.

2.10.2 Drinking Water Quality

Drinking water is brought in by personnel to the site. The water wells in all of the sectors have been found to contain arsenic. The well depths are 420 feet for every sector. They have been tested before and deemed undrinkable, but the water is still used for the restrooms and cleaning around the buildings. In Maine, arsenic is naturally occurring in soil and rocks, and drilled wells have a higher probability of containing arsenic. According to the state of Maine, 1 out of every 10 private wells has levels of arsenic that are of concern. The following discussion on naturally-occurring arsenic is taken from a digest printed in June 2005 from the University of Maine, Senator George J. Mitchell Center for Environmental and Watershed Research, "ARSENIC IN MAINE GROUNDWATER, Guidance for Small Water Systems." (http://www.umaine.edu/WaterResearch/outreach/arsenic.htm)

Arsenic occurs naturally in soil and bedrock, and is a common element in the earth's crust. Arsenic is usually found with other elements like sulfur, chloride, oxygen, and iron and manganese ores. Arsenic is also used as an ingredient in pesticides. High arsenic levels can still be found in areas of Maine where arsenic-containing pesticides were applied to apple, potato, and blueberry fields.

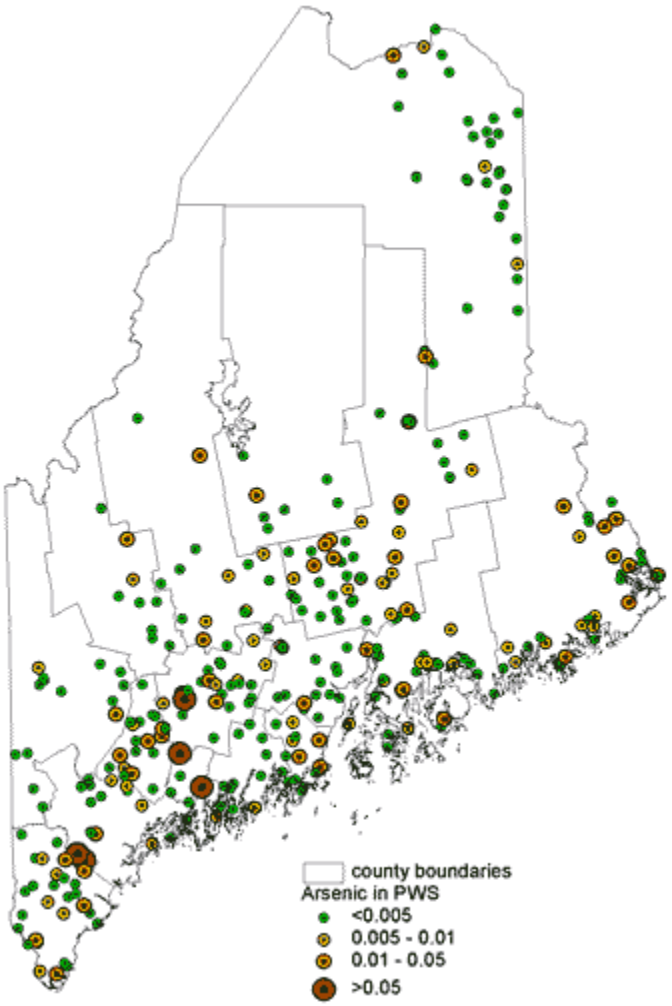
You cannot smell, taste, or see arsenic in drinking water. Laboratory testing is required to detect arsenic in water. Long-term exposure to low levels of arsenic in drinking water has been linked to bladder, lung, kidney, and skin cancer. Arsenic can also harm the nervous system, heart and blood vessels.

As of January 2006, the maximum amount of arsenic allowed in public drinking water systems is 10 parts per billion (0.010 mg/L). This ruling only affects public water supplies, not private residential wells. In Maine, over 5% of public water systems (and as many as 25% private drinking water wells) have average arsenic concentrations above the legal limit.

Arsenic is usually found in drinking water wells drilled into bedrock beneath the ground. As water moves through cracks in the bedrock, it dissolves the arsenic in the rock and carries it into the well.

In the same way, arsenic in weathered rock and soil dissolves as rain percolates through the ground and into groundwater. Drilled bedrock wells are more likely to have high arsenic than dug wells or wells drilled in sand and gravel, and certain kinds of bedrock contain more arsenic than others. The longer water sits in a well, the more time there is for arsenic to dissolve into drinking water, so wells used by homes and seasonal camps may have more arsenic than wells that serve communities. In public wells, where more water is pumped in shorter periods of time, less arsenic may be present because water moves too fast to pick up arsenic from the surrounding rock.

In general, arsenic levels will not change over time. However, the amount of arsenic in a well can vary seasonally as groundwater levels fluctuate, because water is contacting different parts of the rock.



Arsenic in public water supply wells, mg/L.
Source: ME Drinking Water Program

Since arsenic is usually from the bedrock below ground, a well drilled in the same area, even several hundred feet away, also has a good chance of having high arsenic levels. Making a well deeper or sealing off certain sections of a well will only work if you know which part of the bedrock is contributing arsenic. All of these options rely on luck for avoiding an arsenic problem, and all are fairly expensive. A more reliable option with a better chance for success is removing the arsenic with water treatment.

Because arsenic is dissolved in groundwater, it can't be filtered out. In order to treat for arsenic, you have to find out what form ("species") of arsenic is present. Arsenic exists in two forms depending on how much oxygen is in the water. In groundwater, where conditions are usually low-oxygen, arsenic is present as arsenite (As III). In surface water where oxygen is present, arsenic is found as arsenate (As V). Arsenate is much easier to remove, so arsenite first must be converted to arsenate by adding an oxidizing agent such as chlorine or permanganate. Once converted to arsenate, activated alumina, ion exchange, and reverse osmosis technologies can remove arsenic. Another new technology, iron-based adsorptive media, will remove both species of arsenic, but it works more effectively if all the arsenic is in the form of arsenate.

Characteristics of the water can affect the success of all treatment types. High pH and certain ions can make treatment less effective and require more maintenance of the system.

Northeast Laboratory Services tested the wells on the property. The laboratory test results for arsenic at the Moscow transmitter site are shown below:

Sector 1 – 0.016 mg/L (tested in 2003)
Sector 2 – 0.026 mg/L (tested in 2005)
Sector 3 – 0.016 mg/L (tested in 2005)

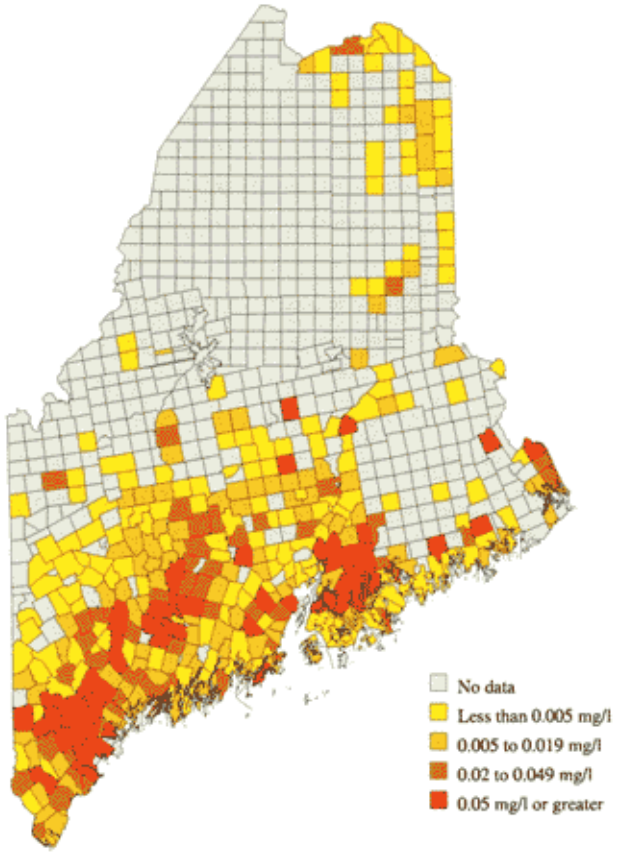
Prior to January 2006, the legal limit of arsenic was 0.050 mg/L. It is now 0.010 mg/L and the Moscow transmitter site's results are higher than the 0.010 mg/L legal limit allowed in public drinking systems for the state of Maine. The U.S. EPA has a similar legal limit. (http://www.epa.gov/safewater/arsenic/index.html). However, the transmitter site is not part of a public drinking system; these are private wells on federal property.

2.10.3 Groundwater

The groundwater in all sectors has been found to contain arsenic, which is discussed in the above section. Results from these tests can be found in Appendix G-3. The tests were conducted by Northeast Laboratory Services, located in Waterville, Maine. The results for Sector 1 well are Lab ID Number PC05145; Sector 2 Lab ID Number is PE 05325; and Sector 3 Lab ID Number is PE 05320. Below is a set of tables that summarize the lab results for each well at the Moscow, Maine Transmitter site. Aside from the arsenic levels, which are over the detection limit in all wells, they were determined to be satisfactory for drinking with the exception of Sector 1 due to the Escherichia coli detected in this well.

The Air Force has not used solvents to clean any electrical components at the radar site in Moscow. There was a one-time use of solvents (paint thinner) to clean paint brushes; however, the paint thinner was properly disposed by Clean Harbors. The Air Force switched to using

disposable brushes thereafter due to the disposal expense. Because of the virtual non-use of solvents at the Moscow ME radar site, no groundwater testing or monitoring is warranted.



Maximum arsenic concentrations in groundwater by town, mg/L
Source: ME Drinking Water Program & ME Geological Survey

Table 2.10-1 Sector 1 Water Well Test Results

Parameter	Result	Detection Limit
Arsenic	.016 mg/L	.005 mg/L
Chloride	<2.0 mg/L	2.0 mg/L
Copper	<.05 mg/L	.05 mg/L
Escherichia coli	Levels were detected on growth medium.	0 CFU/100mL
Iron	.055 mg/L	.05 mg/L
Manganese	<.02 mg/L	.02 mg/L
Sodium	3.7 mg/L	1.0 mg/L
Nitrite-Nitrogen	<.02 mg/L	.02 mg/L
Nitrate-Nitrogen	<2.0 mg/L	2.0 mg/L
Lead	<.01 mg/L	.01 mg/L
pH Electrometric	7.9 stu	2.0 stu

Table 2.10-2 Sector 2 Water Well Test Results

Parameter	Result	Detection Limit
Arsenic	.026 mg/L	.005 mg/L
Chloride	<2.0 mg/L	2.0 mg/L
Copper	<.05 mg/L	.05 mg/L
Escherichia coli	0 CFU/100mL	0 CFU/100mL
Iron	.095 mg/L	.05 mg/L
Manganese	.08 mg/L	.02 mg/L
Sodium	6.0 mg/L	1.0 mg/L
Nitrite-Nitrogen	<.02 mg/L	.02 mg/L
Nitrate-Nitrogen	<2.0 mg/L	2.0 mg/L
Lead	<.01 mg/L	.01 mg/L
pH Electrometric	7.1 stu	2.0 stu

Table 2.10-3 Sector 3 Water Well Test Results

Parameter	Result	Detection Limit
Arsenic	.016 mg/L	.005 mg/L
Chloride	<2.0 mg/L	2.0 mg/L
Copper	<.05 mg/L	.05 mg/L
Escherichia coli	0 CFU/100mL	0 CFU/100mL
Iron	.17 mg/L	.05 mg/L
Manganese	<.02 mg/L	.02 mg/L
Sodium	4.6 mg/L	1.0 mg/L
Nitrite-Nitrogen	<.02 mg/L	.02 mg/L
Nitrate-Nitrogen	<2.0 mg/L	2.0 mg/L
Lead	<.01 mg/L	.01 mg/L
pH Electrometric	7.5 stu	2.0 stu

2.11 Wastewater Treatment, Collection, and Discharge

Sewage and wastewater are treated with on-site septic systems composed of holding tanks and leach fields. Tables 2.11-1 and 2.11-2 show details of the sanitary sewer collection and septic systems. Based on site visit, interview, and record review, there is no evidence of system malfunction.

Table 2.11-1 Sanitary Sewer Collection System

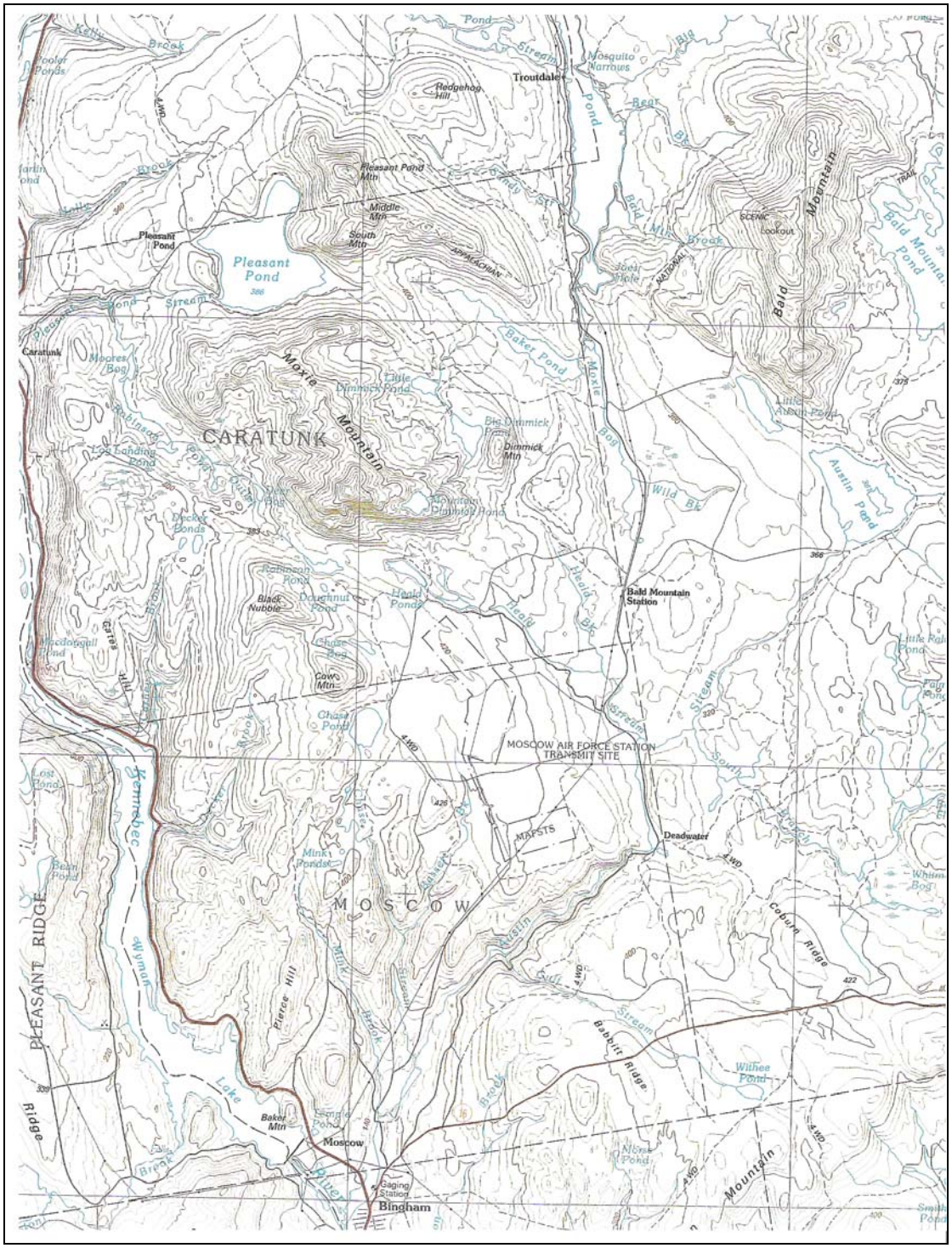
Site	***Length***	***Material***
Transmitter Sector 1	20’	4” cast iron
Transmitter Sector 2	20’	4” cast iron
Transmitter Sector 3	20’	4” cast iron

Table 2.11-2 Septic Systems at OTHB-E Transmitter Site

Site	*Septic Tank Capacity*	*Leach fields*	*Connecting Pipes*
Transmitter Sector 1	1500	100’ x100’	220’ 1.5” PVC
Transmitter Sector 2	1500	100’ x 100’	126’ 1.5” PVC
Transmitter Sector 3	1500	100’ x 100’	126’ 1.5” PVC

According to the current caretaker, the only waste in the septic systems was domestic. Pre-2002 the solids level was measured with a stick. The average number of people at the site has been two (2) since 1997. There was a period when OUSD had twelve (12) or more people at the site for a period of six months.

The septic tanks have not been pumped since CMC & Maintenance had the contract; this was between 1997 and 2002. The caretaker, Mr. Steve Treadwell remembers this because the septic truck rolled over when the brakes failed going down the hill.



Source: EDR Historical Topographic Map Report

Figure 2.10-1 Topographic Map with Water Resources and Contour Lines

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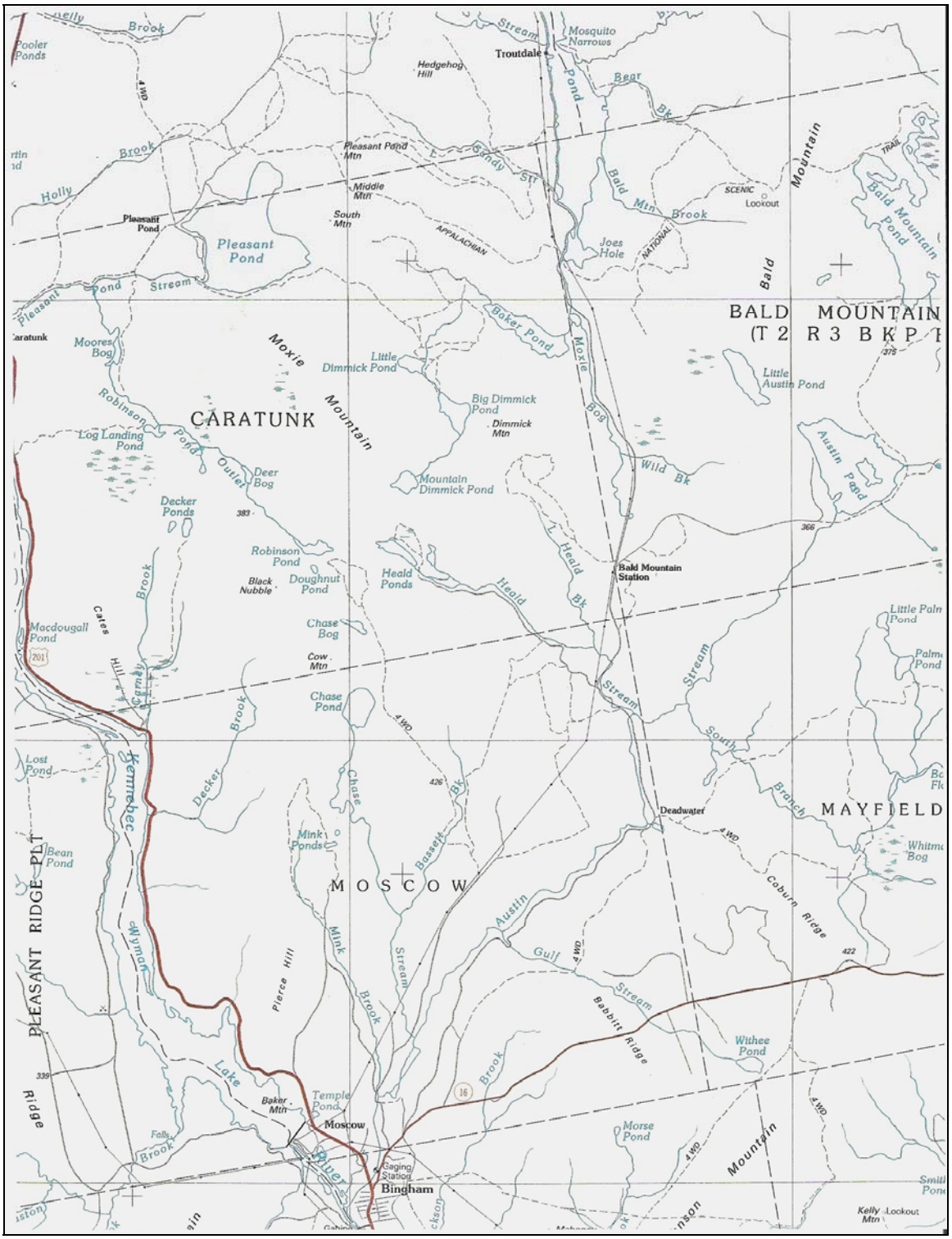

Source: EDR Historical Topographic Map Report

Figure 2.10-2 Map Showing Water Resources in Area

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2.12 Asbestos

Based on interviews and review of available documents, it appears that no asbestos survey has been conducted on the OTHB-E facilities. Although the manufacture of some asbestos containing materials was banned by the EPA in the 1970s, many asbestos containing products were unregulated until 1989 when the EPA announced a Ban and Phase-Down Rule. The OTHB-E facilities were built during the 1980s. A review of the building specifications (The General Electric Company), as shown in Appendix G-4 show that the insulation for all the buildings in Sectors 1, 2 and 3 have fiberglass insulation. There is no asbestos-containing-material (ACM) in the buildings.

2.13 Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) can be found in electrical transformers and may also be contained within the ballasts of older fluorescent light fixtures. A number of transformers are present on the OTHB-E transmitter site as seen in Table 2.13-1. No records of PCBs were available and OTHB-E staff report that transformers are labeled "no PCBs." No spills of liquids from transformers have been recorded at this transmitter site. All transformers that are not related to lighting have already been removed. Appendix G-3 also contains specifications for the buildings, transformers, and other aspects of the Site.

Table 2.13-1 Electrical Transformers at OTHB-E Transmitter Site

Site	***Security Light Transformers***	***Antennae Light Transformers***	***Electrical Distribution System***
Transmitter Sector 1	14	30	2
Transmitter Sector 2	11	30	2
Transmitter Sector 3	11	30	2

2.14 Radon

The EPA's Map of Radon Zones for Somerset County, Maine, was reviewed. The map assigns zones based on the average short-term radon measurement expected in a building lacking radon control. The OTHB-E transmitter site is located in an area rated as Zone 1, having the highest potential for presence of radon. Average screening levels are greater than four (4) picoCuries per liter (pCi/L). The Maine State advisory levels (levels at which it is recommended that action be taken to reduce the radon level) for radon in indoor air is four (4) pCi/l. No testing or sampling for radon was performed during the site inspection and no records of past radon testing were available.

2.15 Lead-Based Paint

No lead-based paint has been used at the site. The three buildings' exteriors have never been painted and the interior of each building was last painted in 1996. The antennae towers have not been painted since installation.

2.16 Biological Resources

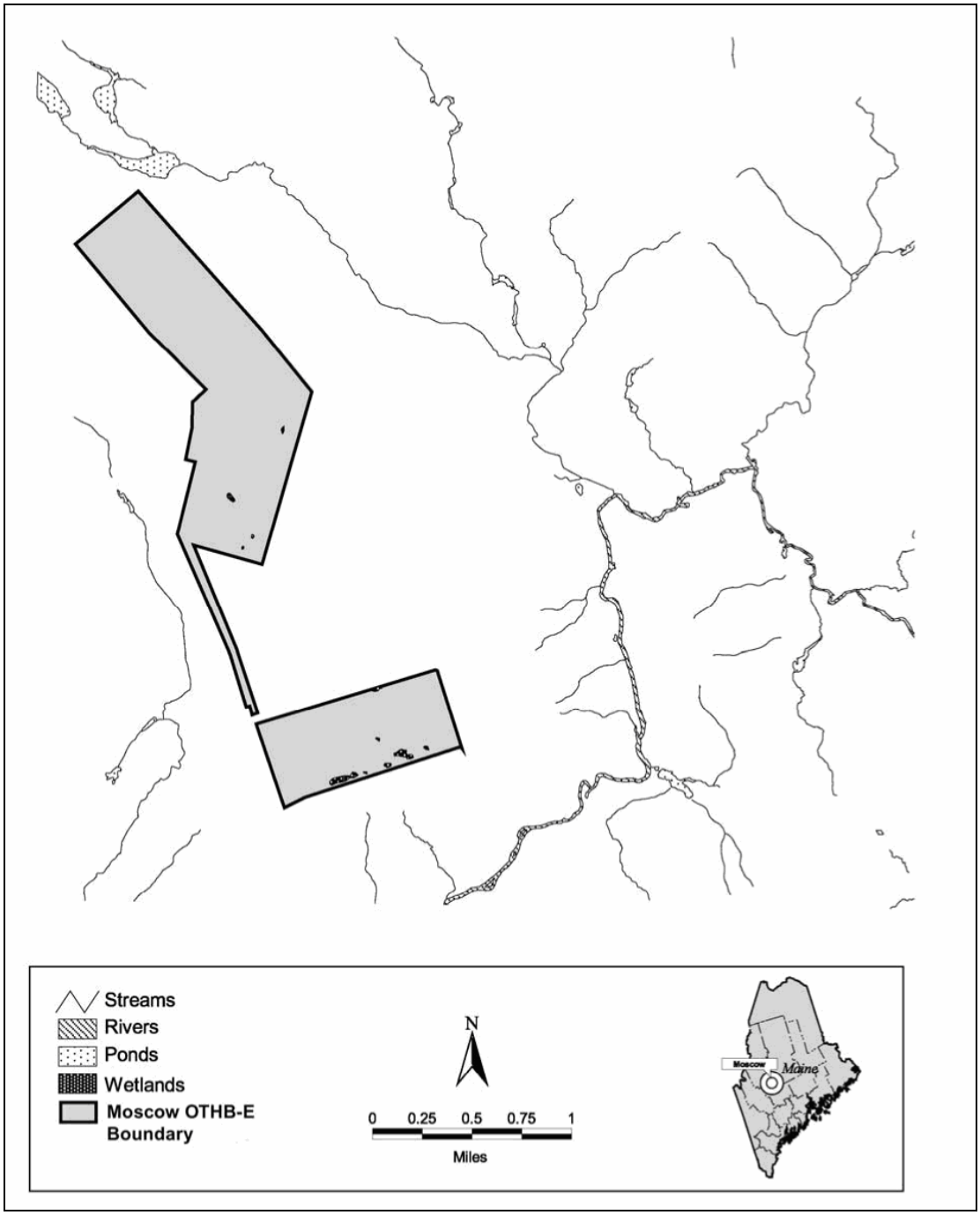
Biological resources addressed in this document include wetlands and threatened and endangered species. There is no record of threatened and endangered species surveys or wetland delineation ever having been conducted on the OTHB-E Radar System sites.

2.16.1 Wetlands/Floodplains

In Sectors 2 and 3 of the transmitter site are palustrine emergent wetland areas which are seasonally saturated or flooded. Many of these wetland areas occur in basins or channels excavated by man (Figure 2.16-1). No wetlands surveys were conducted on the site as a part of this project.

2.16.2 Protected Species

No survey has ever been conducted to look for threatened and endangered species. A list of threatened and endangered species, both animals and plants, for Somerset County is included in Appendix I. This list was provided by Robert Cordes, Assistant Regional Wildlife Biologist, of Maine Inland Fisheries and Wildlife, Strong Regional Headquarters. Figure 2.16-2 shows various observations of the wildlife present in and around the transmitter site.



Source: USAF 2003 Final EBS for Proposed Land Disposal: OTHB-E

Figure 2.16-1 Wetlands at OTHB-E Transmitter Site Near Bingham, Maine

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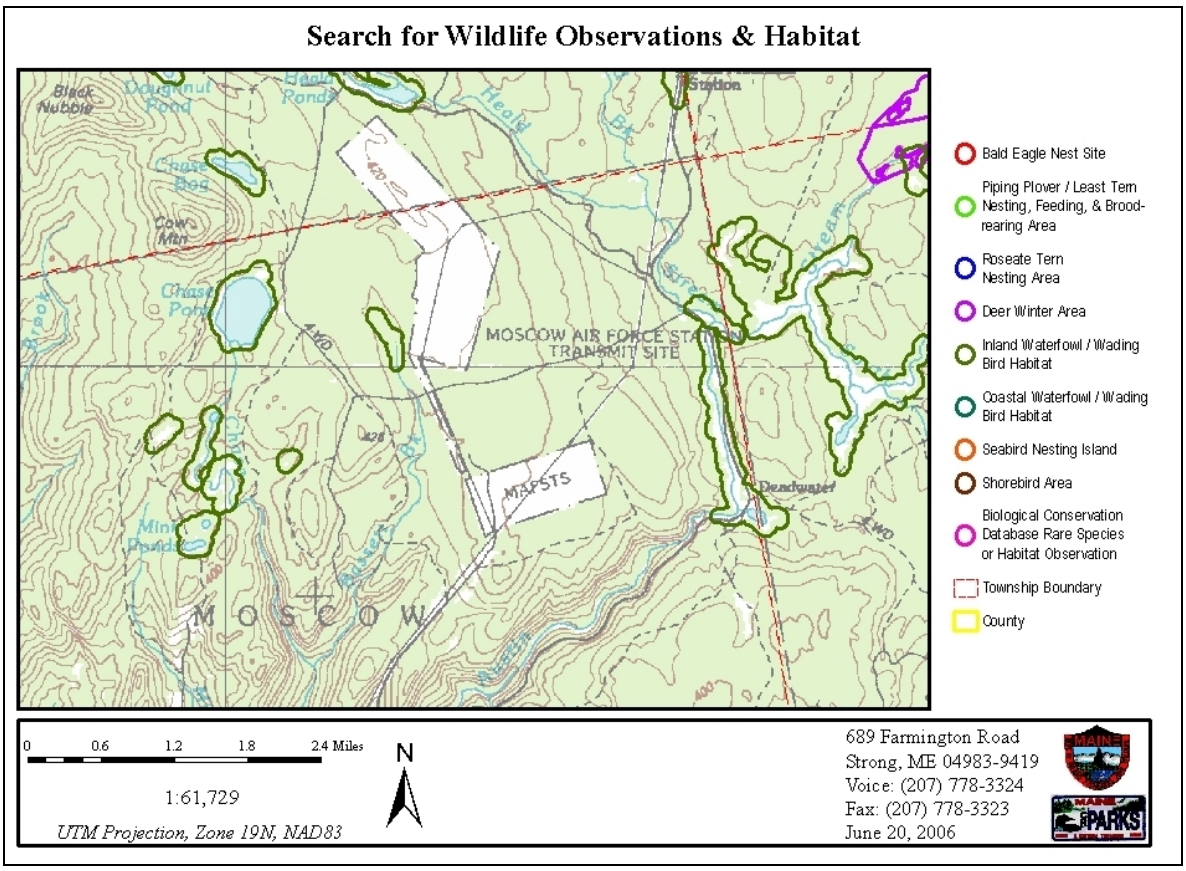

Source: Maine Department of Inland Fisheries and Wildlife, Strong Regional Headquarters

Figure 2.16-2 Map of Wildlife Observations near Transmitter Site

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2.17 Cultural Resources

Cultural resources typically are divided into three major categories: archaeological resources (prehistoric and historic), architectural resources, and traditional cultural resources. Archaeological resources are locations and objects from past human activities. Architectural resources are those standing structures that are usually over 50 years of age and are of significant historic or aesthetic importance to be considered for inclusion in the National Register of Historic Places (NRHP). Traditional cultural resources hold importance or significance to Native Americans or other ethnic groups in the persistence of traditional culture.

Examples may include sites associated with Native American religious beliefs; communities with buildings and landscapes which reflect cultural traditions valued by long-term residents; or traditional resource areas (e.g., sites for collecting medicinal plants or gathering eagle feathers) that a particular group has used for generations. Such resources may also be eligible for inclusion in the NRHP. Traditional cultural resources are not easily recognized in cultural resources surveys and their identification is gained through interviews with persons with historical ties to the area.

Prehistoric Period

Prehistoric occupation in Maine is conventionally divided into four major periods that reflect technological and social adaptation and development. These periods are the Paleo-Indian, Archaic, Ceramic, and Contact Periods.

The Paleo-Indian Period (9500 - 7000 B.C.) encompasses the end of the last continental glaciation of Maine and subsequent migrations of vegetation, fauna, and people into the area (Davis and Jacobson 1985; Kellogg 1991:68-73; Spiess and Wilson 1987:129-132). The Archaic Period (7000 – 1000 B.C.) includes a diversification of adaptations to the landscape of Maine, and changes in climate, vegetation, sea level, and other environmental factors (Bourque 1975; Sanger 1975; Snow 1980; Ritchie 1980). Movements of people and contacts between different cultures during this time led to a complex archaeological record with many unresolved questions.

The Ceramic Period (1000 B.C. - A.D. 1500) begins with the introduction of fired-clay pottery into Maine and perhaps also some cultivated plant foods (Sanger 1979; Belcher 1989; Spiess et al. 1983). The prehistory of Maine ends with the arrival of European colonists to northern New England, or the Contact period (A.D. 1500 – 1680), which ultimately lead to the demise of some traditional cultures (Bourque 1989; Spiess and Spiess 1987).

Four types of prehistoric archaeological sites are generally recognized in Maine: (1) habitation/workshop sites; (2) lithic quarries; (3) cemeteries; and (4) rock art petroglyphs and pictographs (Maine Historic Preservation Commission 2002). A majority of the known prehistoric habitation/workshop sites in Maine are located adjacent to canoe-navigable water (coast, lake, river, stream, swamp) or (former) waterways or shorelines of the same types. Sites can also be predicted on highly specialized locations, such as (windblown) sands in the case of Paleo-Indian sites, or tillable, alluvial (river flood sediment) soils in the case of Late Woodland and Early Contact Period sites.

The majority of habitation/workshop sites in Maine are shallowly buried in soils derived from glacial till, reworked till, sand, gravel, and silt emplaced by geological processes before 12,000 years ago. Archaeological remains are typically found within the top 30 to 40 cm of active soil turnover (by frost and plant growth). In these situations, which represent more than ninety-five percent of the land surface of Maine, archaeological material can still be discovered or impacted by any process that disturbs the upper soil column (Maine Historic Preservation Commission 2002). Deeply buried sites occur only in alluvial settings along rivers and streams, where periodic flooding has deposited silt or sand which separates sequential occupations.

Historic Period

In the late 1970s, General Electric (GE) Aerospace received the contract to build a prototype OTHB-E. The prototype was constructed in Maine, with the transmitter at Moscow and the receiver at Columbia Falls. Initial testing of the system was conducted from June 1980 to June 1981 (Winkler 1997:60-61; 120). Due to the success of the 1981 tests, GE Aerospace developed a full-scale OTHB-E radar model, AN/FPS-118 the following year. The radar was accepted by the Air Force in 1990 after successful testing of the full scale OTHB-E was completed. Because of the end of the Cold War, the radar facilities were reduced to warm storage status with limited operations and personnel to maintain the systems. The radar was kept in a state that could return to full use within 12 months. During this time, the National Oceanographic and Atmospheric Administration recognized the radar's potential for environmental monitoring and gained Air Force permission to use the radars for studying ocean clutter and hurricanes (Federation of American Scientists n.d.). In 1998, the radar was further reduced to cold storage with no operations use and a minimum of personnel in attendance.

2.17.1 Archaeological/Historic Sites

From the 1950s to the end of the Cold War, a key part of the U.S. military infrastructure was a radar system for providing early warning of Soviet bombers approaching the continental U.S. The system evolved and expanded throughout the Cold War to meet new enemy weapons and to integrate new technological achievements. The OTHB-E radar system sites were the last (and never fully-deployed) components of that system. The plan for the OTHB-E system originated in 1966, as part of Secretary of Air Force Harold Brown's four-element plan to improve continental air defense by the 1970s. The plan included the deployment of a new supersonic interceptor; the creation of airborne warning and command system aircraft; development of a new antiaircraft missile; and fielding an OTHB-E radar system to overcome the fundamental drawback of conventional radar systems - the conflict between the curve of the earth and the line of sight of radar waves.

The attempts to field such a radar system in the 1960s failed because the use of the "forward scatter" method, the only projection method under the current technology, proved impractical and cutbacks of nonwar fighting defense expenditures during the Vietnam War precluded additional research (Bruce-Biggs 1988:269-271; Cornett and Johnson 1980; Winkler 1997:45-47). In 1970, the Air Force Rome Air Development Center successfully tested components for a frequency modulation/continuous wave radar "backscatter," capable of detecting and tracking objects at over-the-horizon ranges. Throughout the decade, research continued on the backscatter technology. The final one-million-watt OTH radars were capable of detecting objects from a range of 500 to 2,000 miles, far beyond the range of conventional microwave radars, by

bouncing their 5-28-MHz waves off the ionosphere. The Maine system was placed on limited operations in 1988, and fully activated in 1990. The development of the OTHB radar took over 25 years and cost $1.5 billion to develop (2003 EA/EBS).

In addition to the Maine system, the Air Force planned OTHB radars in the central sector radar facing south; an Alaska system facing north; and radars on the west coast to detect enemy bombers and cruise missiles. With the end of the Cold War, Congress found the OTHB system redundant and unnecessary and the Maine system was reduced to cold storage status.

In 2003, the Air Force Air Combat Command commissioned an archaeological survey of the transmitter site, anticipating its eventual disposal. No archaeological sites were discovered at the Moscow transmitter station. No traditional cultural resources are known to exist at the transmitter site in Moscow (*OTHB Radar System, East and West Coast Sites, Documentation Package for Compliance With Section 106 of the National Historic Preservation Act and 36 CFR 800.11(e), Protection of Historic Properties*, Environmental Division (A7V), Installations and Mission Support Directorate (A7), HQ ACC, Langley AFB, VA, 26 July 2005).

2.17.2 Native American Issues

No Native American issues are known to exist at the transmitter site in Moscow.

2.17.3 SHPO Concurrence on Closure of Site

Appendix G-1 provides a full copy of the Documentation Package for Compliance with Section 106 of the National Historic Preservation Act and 36 CFR 800.11(e), Protection of Historic Properties for the OTHB Radar System East and West Coast Sites. Also included within this study is the July 22, 2005, correspondence from the Maine State Historic Preservation Commission, concurring with the Phase I archaeological survey report prepared for the Moscow transmitter site.

2.17.4 Compliance with the National Historic Preservation Act (NHPA)

Air Combat Command conducted cultural resource inventories at the component sites of the OTHB Radar System on both coasts. Per Section 106 of the NHPA and 36 CFR 800, ACC consulted on the proposed undertaking and the results of these inventories with the relevant State Historic Preservation Offices (SHPOs) in Maine, Oregon, California, and Idaho, the Advisory Council on Historic Preservation, and federally recognized Indian tribes.

No traditional cultural resources were identified at any of the OTHB sites. At the sites in Maine, no significant archaeological resources were identified. The Maine SHPO accepted the archaeological inventory reports and concurred with this final determination. The Cold War era facilities of the entire OTHB Radar System, determined to be a significant historic property, were documented in a Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) package. Delivery to and acceptance of this package by the Maine SHPO is scheduled for April 2007, which will complete Section 106 compliance for the Maine sites.

3.0 FINDINGS FOR ADJACENT PROPERTIES

3.1 Off-base Properties

A visual observation of properties immediately adjacent to the OTHB-E site was conducted during the site inspection. Lands adjacent to the OTHB-E Radar System transmitter site are primarily commercially timbered woodlands used seasonally for hunting. No houses lie within the immediate vicinity of the site.

Federal and state environmental databases were searched to identify any reported occurrence of environmental contamination on the transmitter and receiver sites, and on adjacent properties within two miles of the center point of the sites. A list of databases searched is presented in Section 1.3.2. No sites within the search area were identified in these databases. Appendix G-1 contains the complete report from EDR.

3.1.1 Land Uses Within ¼ Mile Of Property

The adjacent land is primarily used for commercial timber production and is seasonally hunted. There are no properties near the site because the transmitter site property encompasses 1,274 acres.

3.1.2 Potential Environmental Concerns Within 1 Mile Of Property

No property within one (1) mile of the Moscow site poses any environmental concerns. The reports that provide the results from this search can be found in Appendix G-1.

4.0 APPLICABLE REGULATORY COMPLIANCE ISSUES

4.1 Compliance Issues

Federal and state environmental databases and OTHB-E records were reviewed to determine whether there were documented environmental, hazardous material, or hazardous waste regulatory compliance issues. Based on a review of the federal and state databases listed in Section 1.3.2 of this document, on-site documents, and interviews with OTHB-E personnel, there are no regulatory compliance issues associated with the OTHB-E transmitter property or the properties immediately adjacent.

4.2 Description of Corrective Actions Taken or In Progress

Since there are no compliance issues, no corrective actions are necessary.

5.0 CONCLUSIONS REGARDING SUITABILITY TO PROCEED WITH THE REAL ESTATE TRANSACTION

5.1 Facility Matrix

Observed conditions at the Moscow OTHB-E Transmitter Site are summarized in the facility matrix (Table 5.1-1) and presented below.

Table 5.1-1 Facility Matrix for Moscow, Maine Transmitter Site

Site	Potential Environmental Concerns	Category
Transmitter Sector 1 Operations Building	• 75 gallon diesel AST • Back-up power supply batteries for substations • Hazardous materials locker with paint, engine oil, other household chemicals • Light and electrical distribution transformers • Septic tank and drain field	2
Transmitter Sector 1 Garage	• Hazardous materials locker with paint, engine oil, other household chemicals • Staining on floor. Personnel report from small spill of diesel fuel, cleaned with absorbent material • 300 gallon AST (diesel fuel) • Drum marked "hazardous waste" • Raised area marked "ethylene glycol"	2
Transmitter Sector 2 Operations Building	• 75 gallon diesel AST • Back-up power supply batteries for substations • Hazardous materials locker with paint, engine oil, other household chemicals • Light and electrical distribution transformers • Multiple large boxes reportedly contain electrical transformers • Septic tank and drain field	2
Transmitter Sector 3 Operations Building	• 75 gallon diesel AST • Back-up power supply batteries for substations • Hazardous materials locker with paint, engine oil, other household chemicals • Large store of household herbicide • Light and electrical distribution transformers • Staining in 3 locations of floor • Septic tank and drain field	2
Transmitter Power Substation	• Located between Sectors 2 and 3, "No PCBs" sign. • Electrical distribution transformers	2

5.2 Property Categories

In the above matrix, Table 5.1-1, property categories are used to indicate the degree of contamination associated with the property. Property categorization was selected based on commercial guidance from Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities (ASTM D57467-98) and Section

331 of the National Defense Authorization Act, 1997. Categories used in the facility matrix are defined below:

Category 1 – Areas where no release or disposal of hazardous substances or petroleum substances has occurred (including no migration of these substances from adjacent areas)

Category 2 – Areas where only release or disposal of petroleum substances has occurred

Category 3 – Areas where release, disposal, and/or mitigation of hazardous substances has occurred, but at concentrations that do not require a removal or remedial response

Category 4 – Areas where release, disposal, and/or mitigation of hazardous substances has occurred, and all removal or remedial actions have been taken

Category 5 – Areas where release, disposal, and/or mitigation of hazardous substances has occurred, and all removal or remedial actions are underway, but have not yet been completed

Category 6 – Areas where release, disposal, and/or mitigation of hazardous substances has occurred, but remedial actions have not been implemented

Category 7 – Areas that are not evaluated or require additional evaluation.

Property in the first four categories is eligible for deed transfer. Property in the last three categories will not be considered for transfer until the necessary actions have been taken and the property has been reclassified into one of the first four categories. Leases would be considered on a case-by-case basis for the properties within the last three categories.

5.3 Natural Resources Issues

No natural resource issues were identified during the site inspection, interviews or review of available documentation.

5.4 Data Gaps

There are no known data gaps; all information needed was available from federal, state, and local officials.

5.5 Phase II EBS Recommendation

There is no evidence of adverse environmental conditions, contamination or hazardous conditions at the Moscow transmitter site. The adjacent land uses were also observed from the subject site for evidence of hazardous activities occurring on the site. Based upon evidence and other information discovered during the records research, interviews and on-site inspections, a Phase II EBS is not recommended.

6.0 RECOMMENDATIONS REGARDING PROCEEDING WITH THE REAL ESTATE TRANSACTION

Because all portions of the real property proposed for transfer qualify for property Category 2, it is recommended that the real estate transaction proceed under AFI 32-7066.

Appendix A
References

REFERENCES

AFI 32-7066 *Environmental Baseline Surveys in Real Estate Transactions* (U.S. Air Force).

AFI 32-7086 *Hazardous Materials Management* (U.S. Air Force).

AFI 32-9004 *Disposal of Real Property* (U.S. Air Force).

ASTM D57467-98 *Standard Classification of Environmental Condition of Property Area Types for Defense Base Closure and Realignment Facilities* (ASTM, 2000).

ASTM E-1527 *Environmental Site Assessment for Commercial Real Estate* (ASTM, 2000).

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Appendix B
Acronyms and Abbreviations

ACRONYMS AND ABREVIATIONS

ºF	Degrees Fahrenheit
ACC	Air Combat Command
ACM	Asbestos-Containing-Material
AFI	Air Force Instruction
Air Force	United States Air Force
ANGB	Air National Guard Base
AST(s)	Aboveground Storage Tank(s)
ASTM	American Society for Testing and Materials
BRS	Biennial Reporting System
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CONSENT	Superfund (CERCLA) Consent Decrees
CORRACTS	Corrective Action Report
DoD	Department of Defense
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EDR	Enviromental Data Resources, Inc.
EIAP	The Environmental Impact Analysis Process
ERNS	Emergency Response Notification System
ERP	Environmental Restoration Program
FINDS	Facility Index System/Facility Identification Initiative Program Summary Report
FONSI	Finding of No Significant Impact
FTTS INSP	Federal Insecticide, Fungicide and Rodenticide Act/Toxic Substances Control Act Tracking System
GE	General Electric
GSA	General Services Administration
HMIRS	Hazardous Materials Information Reporting System

HOSS	Maine Hazardous Material and Oil Spill System Database
ME	Mountain
MEDEP	Maine Department of Environmental Protection
MINES	Mines Master Index File
MLTS	Material Licensing Tracking System
MSDS	Material Safety Data Sheets
NEPA	National Environmental Policy Act
NFRAP	No Further Remedial Action Planned
NOAA	National Oceanic and Atmospheric Association
NPL	National Priority List
NPL LIENS	Federal Superfund Liens
NRHP	National Register of Historic Places
OTHB-E	Over The Horizon Backscatter – East
OUSD-I	Office of the Undersecretary of Defense-Intelligence
PADS	PCB Activity Database
PCBs	Polychlorinated Biphenyls
pCi/L	picoCuries per Liter
RAATS	RCRA Administrative Action Tracking System
RCRA	Resource Conservation and Recovery Act
RCRA COR	RCRA Corrective Action/Violation Sites
RCRA GEN	Resource Conservation and Recovery Act Large and Small QuantityGenerator
RCRA TSD	RCRA Treatment, Storage, and Disposal Facilities
ROD	Records of Decision
SHPO	Maine State Historic Preservation Office
SHWS	Maine Uncontrolled Hazardous Substance Sites Program List of Investigations
SQF/LF	Maine Solid Waste Facility List
SSTS	Section 7 Tracking System
SWDA	Solid Waste Disposal Act
SWL	Database of Active Solid Waste Landfill Facilities
TRIS	Toxic Chemical Release Inventory System

TSCA	Toxic Substances Control Act
US	United States
USGS	United States Geological Survey
UST(s)	Underground Storage Tank(s)

Appendix C
List of Preparers

LIST OF PREPARERS

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Appendix D
Persons and Agencies Contacted

2006 Revised EBS

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Cordes, Robert, Maine Department of Inland Fisheries and Wildlife

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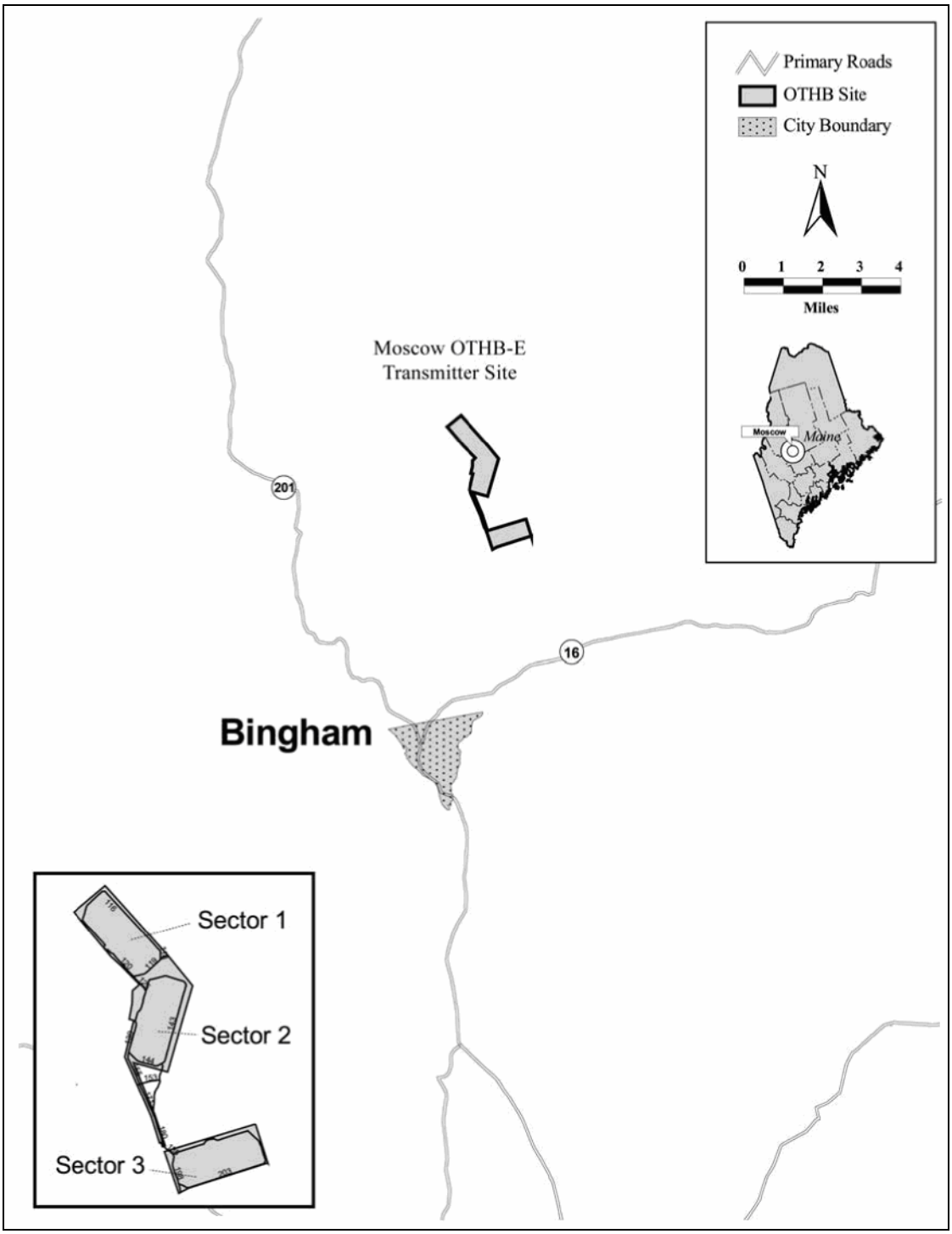
Appendix E
Maps and Aerial Photographs

Source: Maine Office of GIS

Figure 1.1-1 – State of Maine, Moscow Location



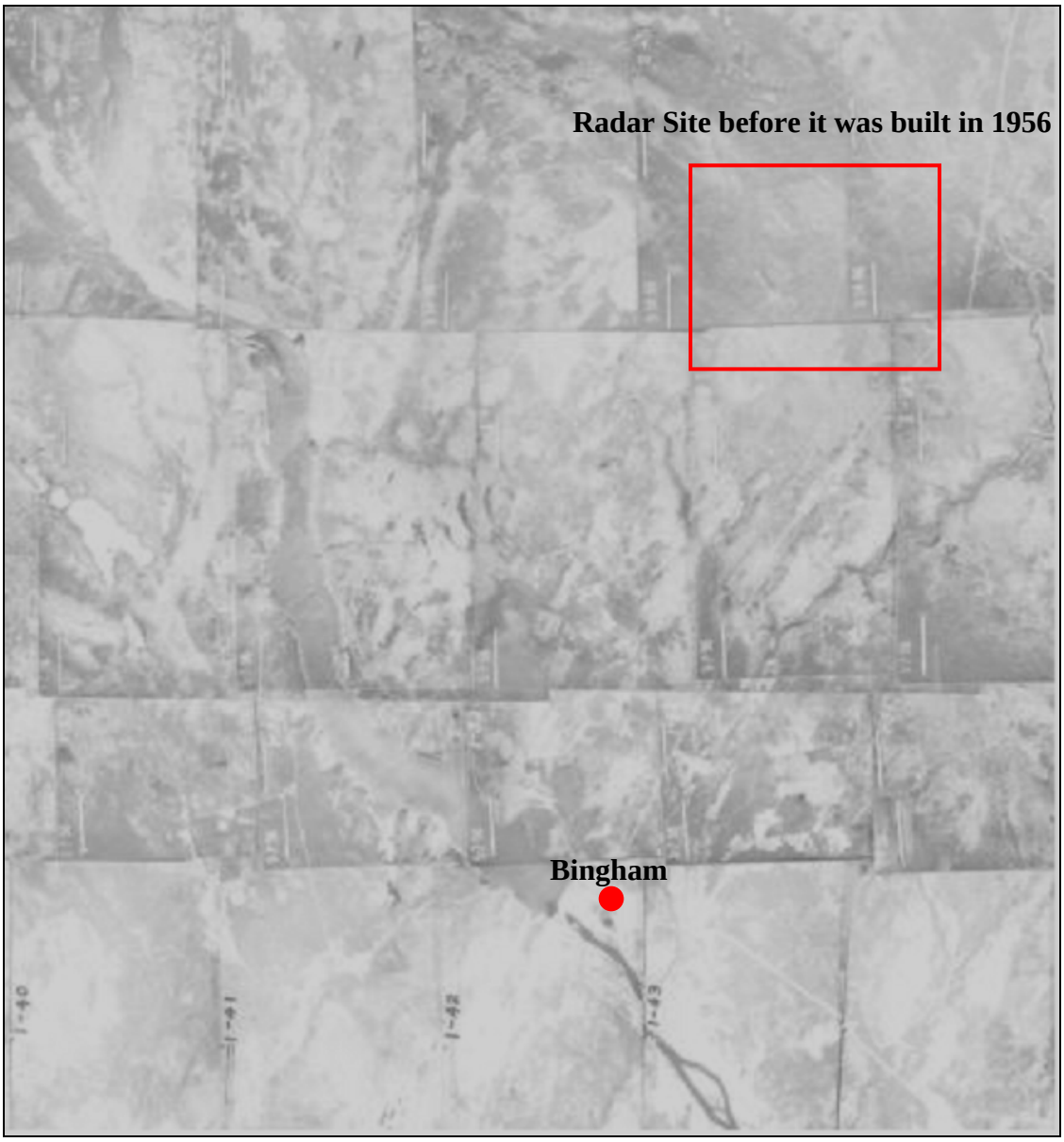
Source: USAF 2003 Final EBS for Proposed Land Disposal: OTHB-E

Figure 1.2-1 OTHB-E Transmitter Site, Outside Bingham, Maine

Source: Topozone.com

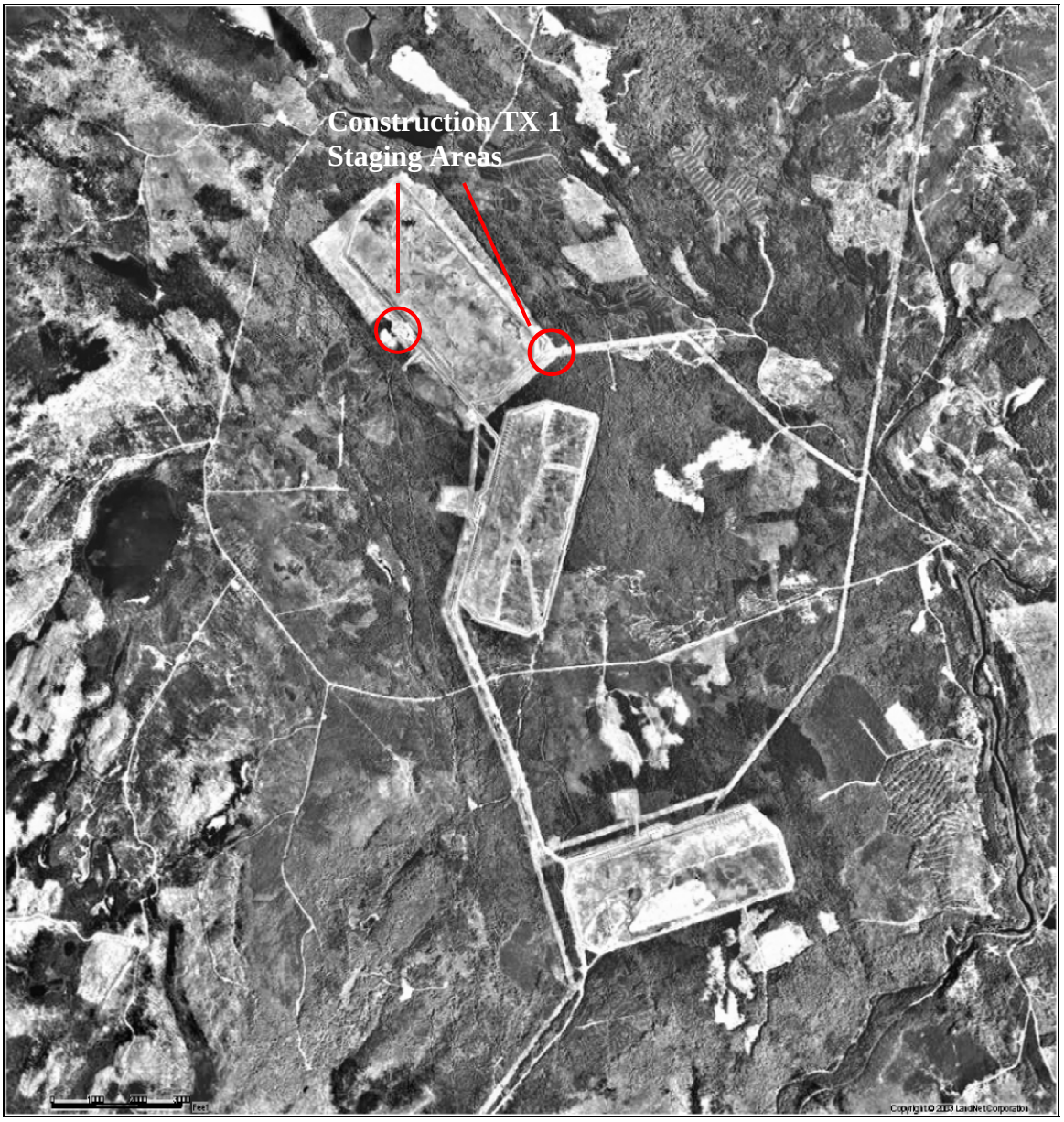
USGS Dimmick Mountain (ME) Topo Map Quad
UTM 19 433068E 5000869N (WGS84/NAD83)
Elevation 1,398.6 ft / 426.3 m (USGS NED)

Figure 2.1-1 OTHB-E Transmitter Site Topography Map



Source: USGS Aerial Maps from Earth Explorer

Figure 2.2-1 1956 Aerial Photograph before Transmitter Site was built

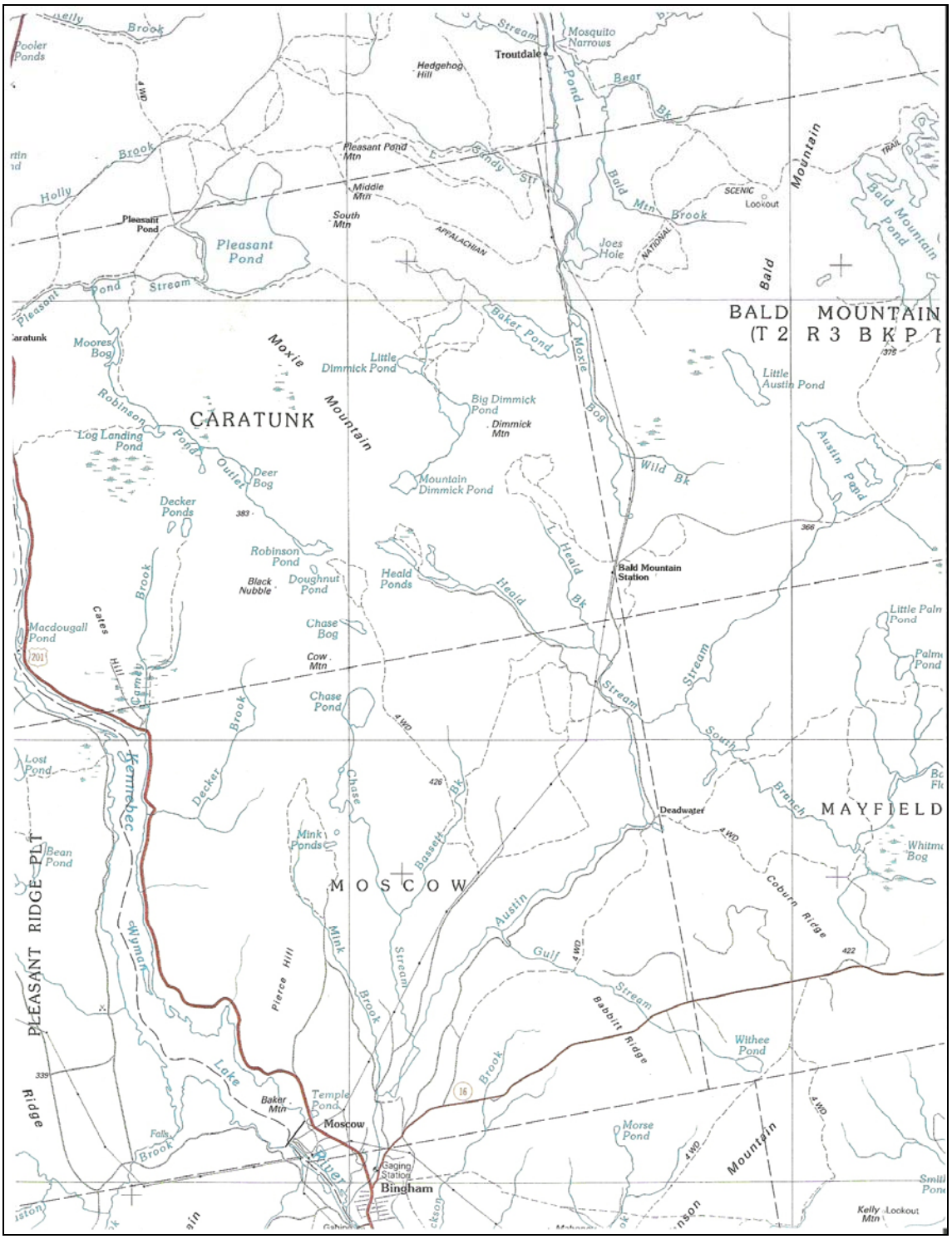


Source: USGS Aerial Maps from Earth Explorer

Figure 2.9-1 Aerial Photograph of Transmitter Site with Construction TX 1 Staging Areas Identified

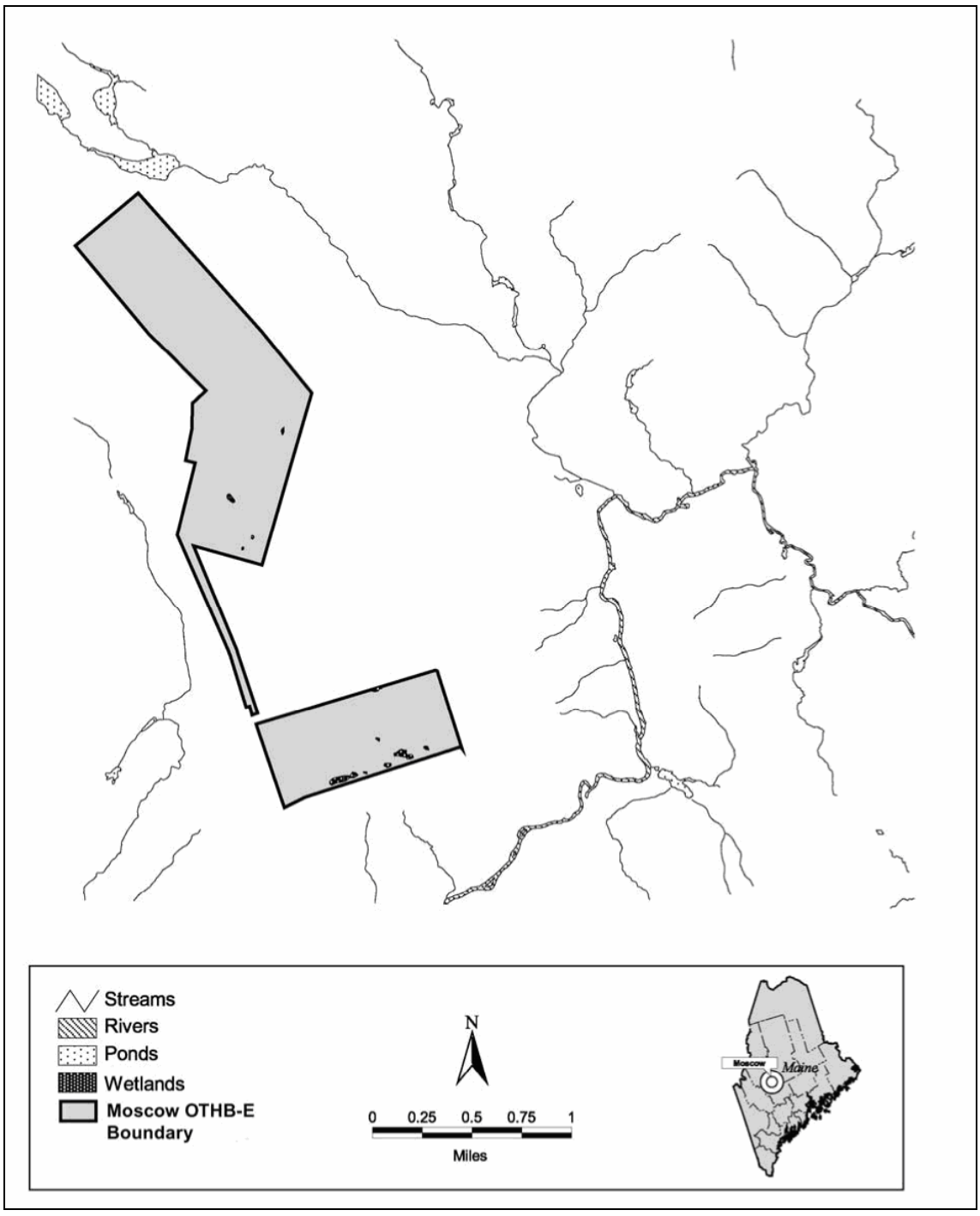
Source: EDR Historical Topographic Map Report

Figure 2.10-1 Topographic Map with Water Resources and Contour Lines of Area



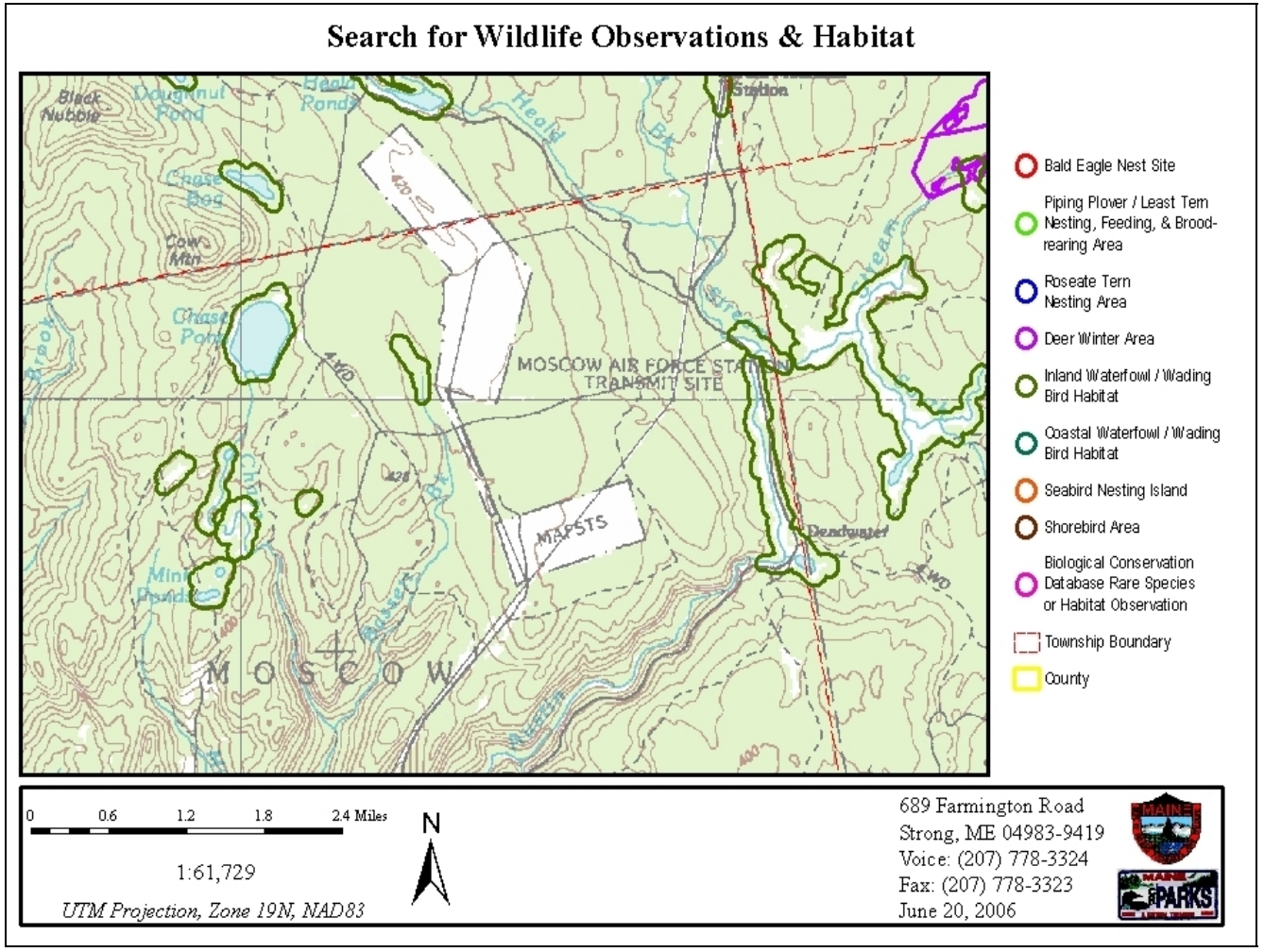
Source: EDR Historical Topographic Map Report

Figure 2.10-2 Map Showing Water Resources in Area



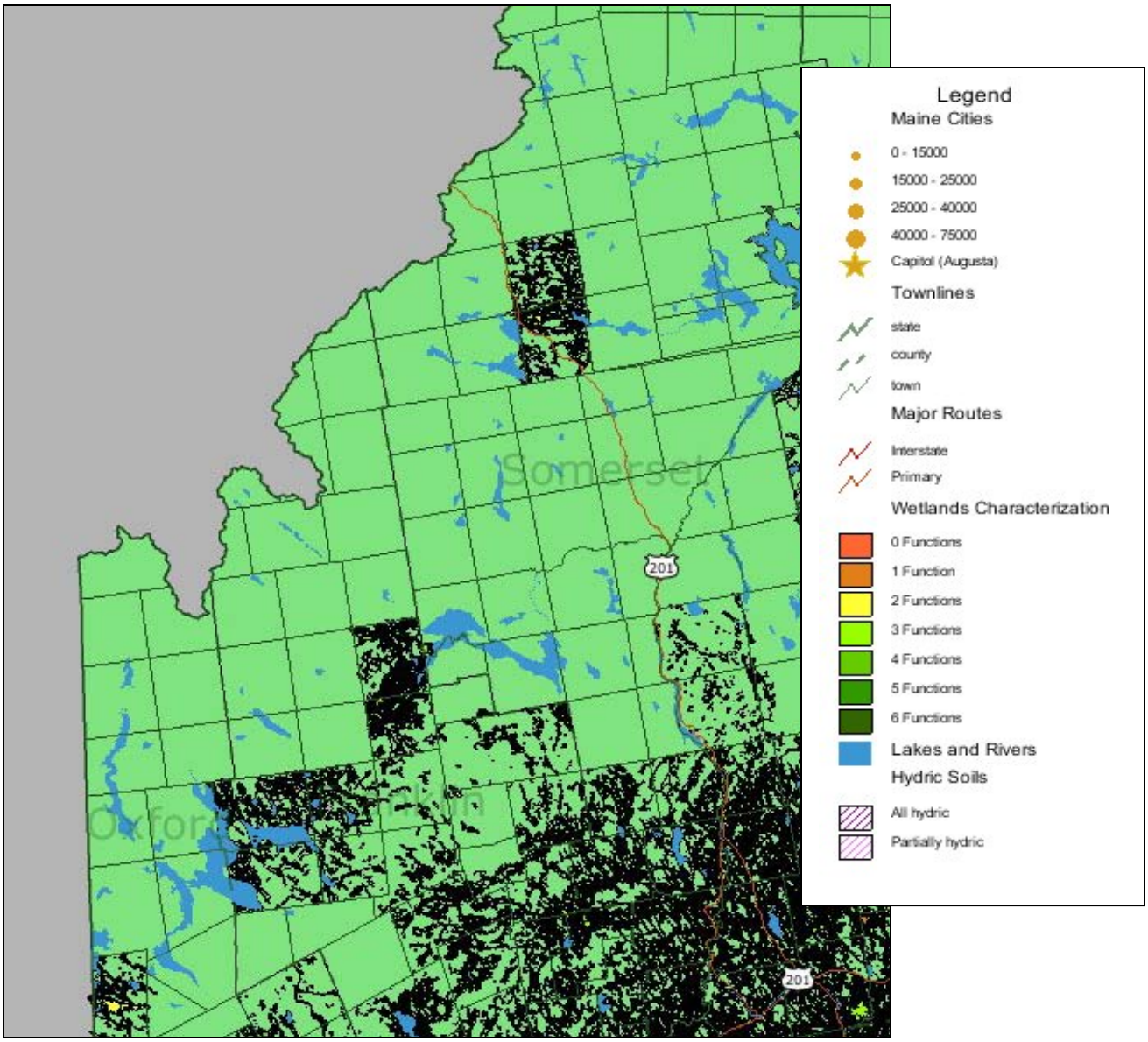
Source: USAF 2003 Final EBS for Proposed Land Disposal: OTHB-E

Figure 2.16-1 Wetlands at OTHB-E Transmitter Site Near Bingham, Maine



Source: Maine Department of Inland Fisheries and Wildlife, Strong Regional Headquarters

Figure 2.16-2 Map of Wildlife Observations near Transmitter Site

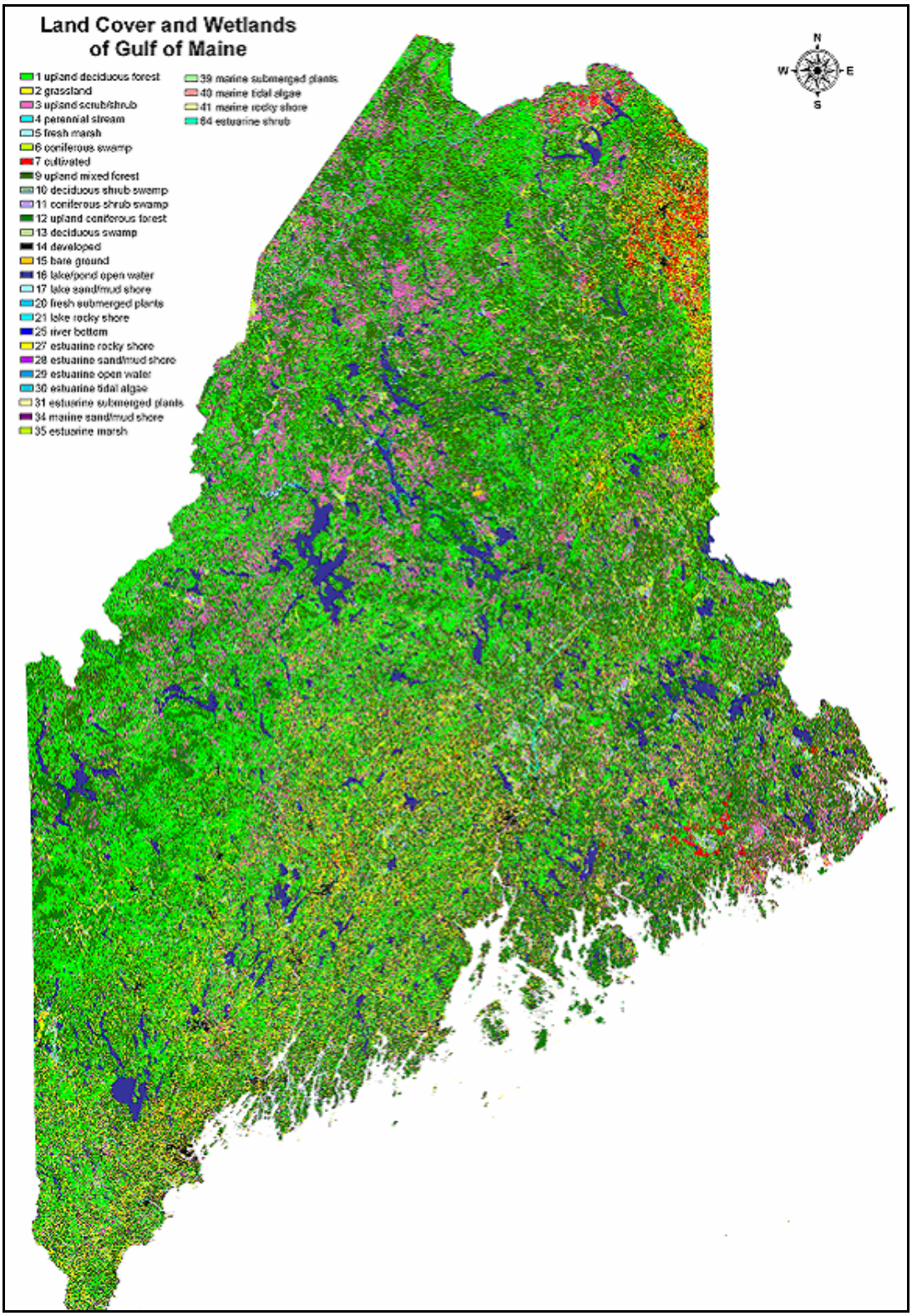


Source: http://megis.maine.gov/

Wetlands Characterization, Somerset County

Source: Maine GIS Department

Bald Eagle Nesting Sites in Area of Transmitter Site



Source: Maine GIS Department

Land Cover and Wetlands of Gulf of Maine

Appendix F
Site Photos

Picture 1: High Voltage Electric to Sector 1

Picture 2: Cooling pipes to transmitters

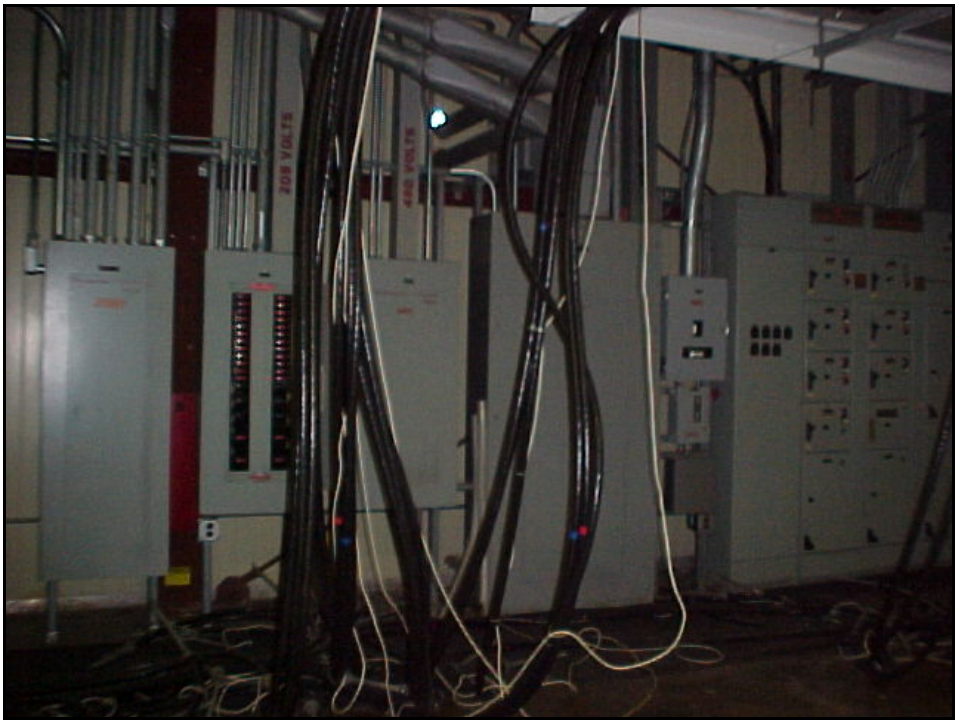
Picture 3: Cooling pipes to transmitters

Picture 4: Exhaust Fan for transmitters

Picture 5: Alarm panel for equipment that has been removed

Picture 6: Main disconnect for Transmitter switches

Picture 7: Cover to groundwater pump



Picture 8: Disconnects for building in background and the wires hanging are the leads that went to the high voltage power supplies

Picture 9: Panel is part of the UPS power system

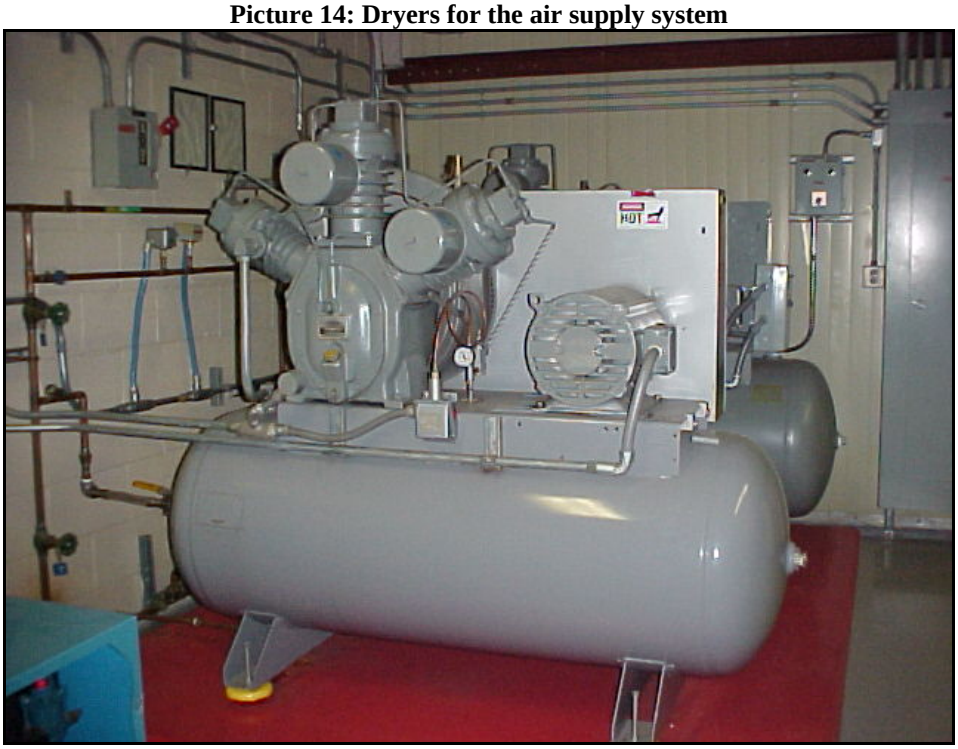
Picture 10: Same as Picture 9

Picture 11: Battery room door to UPS

Picture 12: Cooling water pumps to transmitters and building water supply tank

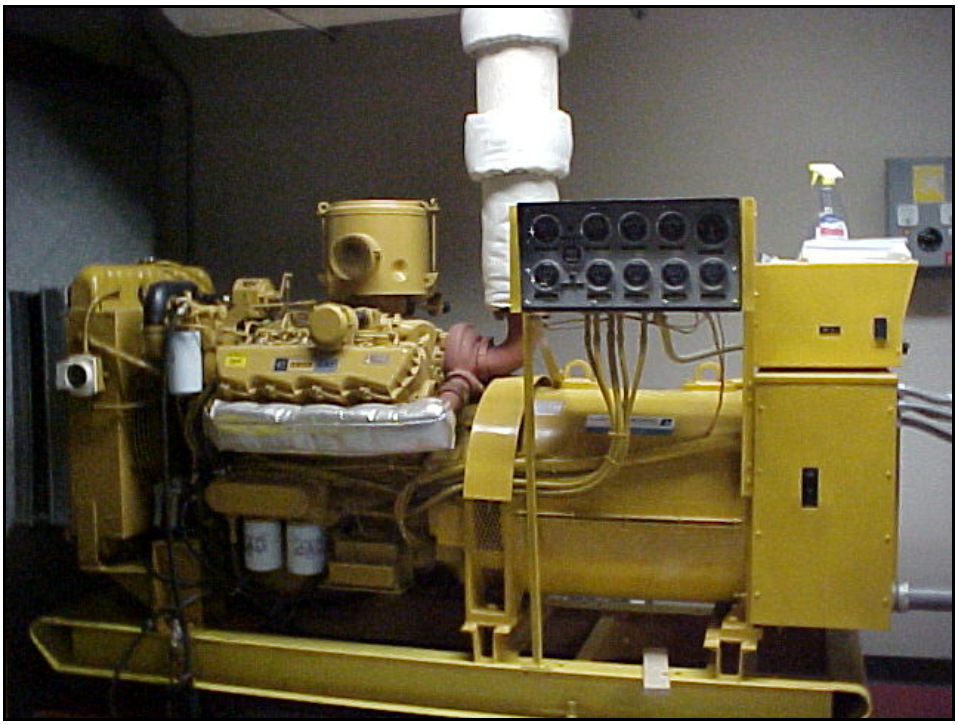
Picture 13: Tank for building water

Picture 14: Dryers for the air supply system



Picture 15: Air compressors Sector 1

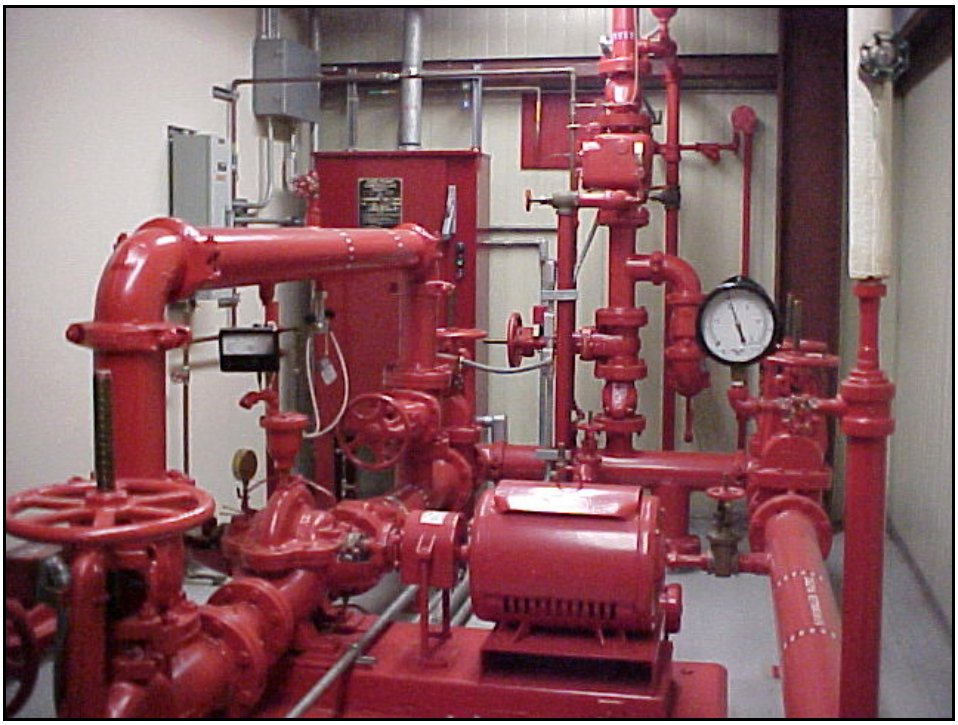
Picture 16: 75 gallon fuel tank for generator



Picture 17: Cat 75KW emergency generator

Picture 18: Muffler for generator

Picture 19: Parts cabinet at Sector 1 contains bolts, screws, etc.



Picture 20: Fire pump for Sector 1

Picture 21: Topographic towers to transmit signal between Bangor, ME Operation center and Moscow, ME Sector 1

Picture 22: Base of topographic towers Sector 1

Picture 23: Scrap metal that will be transferred to DRMO

Picture 24: Gate to Sector 1 compound

Picture 25: Transmitter towers for Sector 1

Picture 26: 75,000 gallon water storage tank in background and heat rejecters for glycol cooling system for transmitters

Picture 27: High voltage connection and transformers for Sector 1

Picture 28: Leach Field

Picture 29: Leach Field

Picture 30: Antenna coaxial cable shed Sector 1

Picture 31: Base of antenna tower Sector 1